THE NEW-YORK

JOURNAL OF MEDICINE

FOR JANUARY, 1854.

PART FIRST.

ORIGINAL COMMUNICATIONS.

ART. I.—*An Account of some Experiments and Observations on the Influence of Poisons and Medicinal Agents upon Plants.* By J. H. SALISBURY, M. D., State Chemist, Albany, New-York. With an Illustration.

IT is well known that different poisons act very differently upon the human body. Some act by combining directly with some of the proximate principles of the tissues, breaking up their organizations, and are hence called corrosive; others so influence the nervous system as to produce a soporific effect, and still others by decreasing vascular action, &c. The same may be said of medicinal agents. As the structure and organization of the plant is much more simple than that of the animal, it was thought that the action of poisons and medicinal agents upon living organized matter could be studied and arrived at with more precision and satisfactory accuracy when administered to the plant, than when given

to the animal. With this view, a series of experiments were commenced in the early part of September, 1851.

The first consideration was to fix upon some good means of introducing poisons and medicines into the circulation of the plant gradually, with as little organic lesion as possible. For this purpose I prepared a series of small glass pipettes or tubes, of various capacities, according to the size of the plant and the concentration of the material to be introduced. The drawing in the margin (Fig. 1), represents one of these; *a*, *b*, is the pipette; *d*, a cork, inserted into the mouth; *c*, *b*, represents one end drawn out to a sharp point, leaving the orifice at *b* very small. A small puncture is now made with a small, smooth, round, sharp awl, or other instrument, in a direction downwards, making an angle with the stem of the plant of about 15°, and perforations just beneath the inner bark. As soon as the pointed instrument is withdrawn, the capillary end of the pipette is carefully and snugly inserted into the puncture, as represented in fig. 2. The pipette is now nearly filled with the poison or medicine, as the case may be, and the cork, *g*, inserted. The liquid material gradually passes from the tube into the plant. In Fig. 2, *h* represents the puncture; *e*, the capillary extremity of pipette; *f*, the height of the material; and *g*, the cork, which is fitted in to prevent evaporation.

EXPERIMENT I.—Selected a strong vigorous sunflower plant (Helianthus annuus,) four feet six inches high. Inserted into

the side of the stem, about midway between its top and base, a pipette of one-eighth inch bore and two inches long. The end inserted into the plant was drawn down to the size of a small knitting-needle. This end was inserted just beneath the inner bark. The tube, after being tightly fitted into the stem, was filled with concentrated sulphuric acid. This was done *Sept. 6th*, 11 A. M. At 1 P. M.—two hours after—the leaves in the immediate vicinity of the point where the sulphuric acid was inserted began to droop. At 3 P. M., these hung down almost in a line with the plant, and others farther removed began to show signs of the influence of the poison. At 6 P. M., one leaf below the incision, and six above it, were quite wilted, and had fallen down in the direction of the stem, being no longer able to support themselves. Four or five other leaves had commenced wilting. Death had advanced farther in the stalk and petioles than in the leaf blades.

Sept. 7th, 9 A. M.—Eight leaves above the point where poison was inserted, and three below it, were quite dead at the base of their petioles, and the whole of them were hanging down beside the stem, with the leaf blades quite wilted. The stem was quite dead to the distance of eight inches below the wound and twenty-two inches above it, and bleached to a gray white, and considerably shrunken. No sour taste could be distinguished in the dead parts. The sap gave an acid reaction with test paper. Six P. M.—The death of the stem has advanced since morning up the stem about six inches. The petioles of eight leaves are entirely dead, and bleached nearly white, and the leaf blades of the same quite wilted.

Sept. 9th, 6 P. M.—Almost entirely dead above the wound, and for eight inches below it.

Sept. 11th, 9 A. M.—Entirely dead above the wound. Death has not advanced downwards any since the 7th.

EXPERIMENT II.—Lilac (Syringa vulgaris). *Sept. 6th*, 11 A. M.—A branch of this plant, one inch in diameter, was sup-

plied with a tube or pipette in the same manner as the sunflower. The branch was about four feet long, several years of age, and very firm in texture. The pipette was filled with nitrate of silver. The solution was made with forty grains of the salt to an ounce of water.

Sept. 7th, 9 A. M.—No change. Six P. M.—No change. The leaves nearest the puncture were from two to three inches off.

Sept. 9th, 6 P. M.—Leaves quite wilted, twelve inches above the wound. Above this they are less, yet considerably affected.

Sept. 11th, 9 A. M.—Death advancing up the stem gradually. The whole limb is affected. The lower leaves are quite dead.

Sept. 14th.—The whole limb quite dead.

EXPERIMENT III.—*Sept. 6th*, 9 A. M.—Another branch of the lilac (Syringa vulgaris) on the same plant was supplied with a tube filled with a solution of corrosive sublimate, 10 grains to the ounce of water. The branch was of this year's growth, about 3 feet long and $\frac{1}{3}$ inch in diameter. A pipette was inserted at its base.

Sept. 7th, 9 A. M.—The leaves just above, and nearest where the poison was inserted, had begun to wither and fall down beside the stem. The leaves affected at about 6 inches removed from where the poison was inserted. 6 P. M.—Two more leaves began to wilt since morning.

Sept. 9th, 6 P. M.—Four of the leaves nearest the wound are quite wilted; the adjacent ones are also slightly affected.

Sept. 11th, 9 A. M.—Death slowly but steadily advancing.

Sept. 12th.—Leaves all wilted.

Sept. 13th.—Branch quite dead.

EXPERIMENT IV.—Horse-chestnut (Æsculus hippocastanum). *Sept. 6th*, 11 A. M.—Inserted a pipette into a limb of a horse-chestnut tree, four feet from its extremity. Branch densely covered with large leaves and green fruit. Placed in the pipette 30 drops of a strong tincture of *iodine*.

Sept. 7th, 11 A. M.—No perceptible change in the appearance of the branch.

Sept. 8th, 9 A. M.—Slight signs of withering at the apex of the leaves on the farthest extremity of the branch.

Sept. 9th, 9 A. M.—Four of the leaves at the extremity of the branch considerably withered.

Sept. 10th, 9 A. M.—Five leaves at the extremity of branch nearly dead.

Sept. 11th, 9 A. M.—Five of the leaves at the extremity of the branch dead, and three more quite withered. Death advancing slowly towards the point where the iodine was inserted.

Sept. 12th, 9 A. M.—Appearance the same as on the 11th.

Sept. 13th, 9 A. M.—No further change, save that the leaves of the branch appear more fresh.

Sept. 14th, 9 A. M.—Branch appears to be recovering from the effects of the iodine. Leaves more healthy in appearance than on the 13th.

Sept. 20th, 9 A. M.—Branch quite recovered, where the leaves are not already dead.

EXPERIMENT V.—Stramonium (Datura stramonium). *Sept. 6th*, 12 M.—Inserted a pipette into a fine thrifty stramonium plant, near the base of a flower, as seen in Fig. 2. Placed in pipette a solution of sulphate of zinc, 60 grains to the ounce of water. Placed in tube 40 drops.

Sept. 7th, 9 A. M.—No perceptible change in the appearance of the plant. All the solution absorbed by the plant. Filled the tube a second time.

Sept. 8th, 9 A. M.—Slight appearance of wilting in the leaf next above the wound.

Sept. 9th, 9 A. M.—One leaf quite dead, and 3 others next above partially withered. 6 P. M.—Influence of medicine gradually advancing upwards. One more leaf and a flower affected.

Sept. 10th, 10 A. M.—The whole plant above wound quite sickly in appearance. Five leaves and one flower next above the wound dead.

Sept. 12*th*, 10 A. M.—The whole plant above the wound dead. Plant quite healthy below the wound.

Sept. 18*th*, 12 M.—Appearance of the plant about the same as on the 12th.

EXPERIMENT VI.—*Castor-oil plant* (Ricinus communis). *Sept.* 7*th*, 9 A. M.—Selected four strong, healthy castor-oil plants, about four feet high. Into one was inserted a pipette, and into this 12 drops of creosote.

Sept. 8*th*, 9 A. M.—The leaf next the insertion of the creosote was quite withered and hung down beside the stem. The death was more perfect about the wound, and at the base of the petiole, than in the leaf blade. 6 P. M.—Four leaves were withered and two were hanging down beside the stem of the plant. The death commenced at the point where the creosote was inserted, and it gradually advanced up and down the stalk from that point with about equal rapidity.

Sept. 10*th*, 6 P. M.—All but the top leaves of the plant are either entirely dead or somewhat wilted. Three of the top leaves are yet unaffected.

Sept. 12*th*, 9 A. M.—Only one leaf on the plant unaffected.

Sept. 14*th*, 9 A. M.—Whole plant affected, nearly dead.

Sept. 18*th*, 9 A. M.—Plant dead.

EXPERIMENT VII.—*Sept.* 7*th*, 9 A. M.—Into another castor-oil plant was placed a pipette, and into this pipette 30 drops of oil of savin.

Sept. 8*th*, 9 A. M.—The leaf next above the point of insertion was quite dead, and had fallen down beside the stem. 6 P. M.—Death gradually advancing, both above and below the wound. Three leaves since morning have wilted and fallen down beside the stem.

Sept. 9*th*, 9 A. M.—The whole plant is wilting. Every leaf on the plant is affected.

Sept. 11*th*, 9 A. M.—Plant dead.

EXPERIMENT VIII.—*Sept.* 8*th*, 9 A. M.—Into another castor-oil plant a pipette was inserted, and into this 30 drops of oil of tansy.

Sept. 9th, 9 A. M.—The leaf next above where the tansy was inserted, was quite wilted and hung down beside the stem. 6 P. M.—Death gradually advancing, both above and below the wound. Three new leaves have withered since morning.

Sept. 10th, 9 A. M.—The whole plant is affected. Every leaf is more or less withered. Those nearest the wound are entirely dead.

Sept. 12th, 9 A. M.—Whole plant dead.

EXPERIMENT IX. *Sept. 8th*, 9 A. M.—Into the fourth castor-oil plant a tube was inserted, and into this 15 drops of nitric acid.

Sept. 9th, 9 A. M.—The leaf next above the wound was quite withered, and hung down beside the stem, it being no longer able to support its own weight. Juice of wilted petiole gave an acid reaction with test paper. 6 P. M.—Death gradually advancing both above and below the wound. Three new leaves withered since morning.

Sept. 10th, 9 A. M.—The whole plant is affected, but to a less degree than those treated with oils of savin and tansy, and to a greater degree than that into which was transmitted creosote.

Sept. 12th, 9 A. M.—Plant nearly dead.

Sept. 14th, 9 A. M.—Plant entirely dead.

In all four of the castor-oil plants, the tubes were inserted about two feet from the base. The death, after the first few hours, in all the plants, proceeded faster above the wounds than below them.

ART. II.—*Practical Observations on Tracheotomy, as a Remedy in Croup.* By J. P. BATCHELDER, M. D., New-York.

I BELIEVE the subject of tracheotomy as a remedy in croup, although one of great importance to every member of the medical profession, and of surpassing interest to many out of it, has not been much discussed in any of our periodicals.

Although the operation has been introduced and performed by some members of the faculty, there are others who doubt, and others still who deny, its propriety or utility, from which it may be inferred that the principles, on which its performance or non-performance in cases of croup depend, have not yet been fully ascertained and settled. With the hope and intent of exciting discussion and eliciting information concerning what may yet be considered a problem in the science of medicine and the art of healing, I submit the following observations on tracheotomy, as a remedy or means of saving life in croup, for publication.

It would seem that the two great problems relating to this matter to be solved are:

1. The propriety of the operation of tracheotomy as a remedy or means of saving life in croup.

2. The pathological conditions and state of the patient, which on general principles warrant or forbid its performance in each particular case.

First. The propriety of the operation of tracheotomy, as a remedy or means of saving life in croup, must depend on its adaptedness to accomplish certain purposes or objects, the chief of which are:—1. To give greater freedom of ingress and egress of air to and from the lungs. 2. To effect the removal of bodies, which, acting as extraneous substances in the trachea or bronchial tubes, endanger life, or may ultimately destroy it. 3. To afford rest or comparative remission of effort to organs laboring under inflammatory action. 4. To facilitate the application of suitable remedies to the seat of the disease.

Related to these points are two others which will be adverted to as we proceed. Does croup indeed present the contingencies which give rise to these objects,—either or all? If so, is tracheotomy suited and competent to meet and obviate them; or, in other words, is it a proper remedy or means of saving life in that disease?

Now, croup is an inflammation of the trachea, involving all its tissues and structures, rendering them less movable

among themselves, and more contracted than in health; hence the calibre of this tube is actually smaller when affected with this disease than in health, and is still further diminished by the transudation of fibrine, which, deprived of its moisture by the passage of air and temperature of the part, is converted into a tolerably firm, but slightly adherent membrane.

This inflammation is not always confined to the windpipe, but often extends up to the larynx, involving its tissues and structures, muscles and ligaments, which, like muscles and ligaments in other parts when inflamed, become rigid and contracted, and subsequently impede the movements of the laryngial cartilages and narrow the rima glottidis; it also sometimes descends below the bifurcation, involving the bronchi to a greater or less extent. Strictly speaking, these extensions are to be regarded chiefly as complications only. The diminished diameter of the trachea,—the fixedness of its constituent parts, and consequent undilatability,—the adventitious membrane,—the extension of the inflammation upward to the larynx, involving all its structures and tissues,—the spasmodically contracted and nearly closed glottis, necessarily and most unequivocally interfere with the ingress and egress of air, and produce the condition which imperiously demands the operation. It should also be remembered that this occurs in the early stage of the disease, and therefore indicates not only the propriety and necessity of the operation, but its early performance, when it can answer, and is most certain to answer, the indications requiring it, than it is after those accidents have occurred which are so sure to follow, and which render the result more doubtful. Sometimes, a little later in the disease, the lower part of the false membrane within the trachea, loosened and detached, doubled and folded upward, obstructs the passage of air and destroys the patient, unless saved by an operation.

When the inflammation travels downward below the bifurcation of the trachea, and much beyond into the bronchi, the false membrane is occasionally found entire, oftener in

fragments; but more generally the morbid product is not membrane, but an albuminous exudation, mingled with mucus or pus, and more or less fluid, which is seldom discharged, like other sputa, through the rima glottidis. This false membrane, mucus, or muco-purulent matter, in the trachea or bronchi, must be regarded as an extraneous substance, which prevents the ingress and egress of air, or hinders its acting upon the lungs, or the lungs upon it; and, consequently, interfering essentially with respiration. These matters can, for reasons which will presently appear, very rarely pass through the glottis, and without their discharge the patient will die; through an artificial opening, however, they will more readily and certainly find an exit.

Having considered the structural and physical changes which take place in the parts affected, and also in the products of the disease, and their relations to the propriety of the operation, we shall now proceed to examine certain modifications of function, which have a similar relation to, and bearing upon that question,—premising that they are based on two principles, essential to the economy of the system, viz:—The relation which obtains between a hollow viscus and its outlet; and the conservative tendency of the sensibility, appropriate and peculiar to every organ and every tissue in the body. In respect to the first, the relation between the viscus and its outlet, it is proper to remark that the bronchial system is to be regarded as a hollow viscus, and the glottis as its outlet, and both subject to the same laws of feeling and action as are other analogous organs and their outlets. For example, if the bladder be irritated, pain is felt at the glans penis; if the stomach be disturbed, uneasy sensations are experienced in the fauces; if the gall-bladder be affected, great distress is felt at its termination in the duodenum; if the bronchi be aggrieved, a peculiar sensation as of an extraneous body is perceived at the back part of the larynx or glottis, for the removal of which coughing is instituted.*

*Subject to an irritable glottis, and often experiencing this sensation, I became

The physical cause of this sensation need not come in contact with the spot where the sensation is experienced. An extraneous body, or an inflammation anywhere in the bronchial system, particularly within the trachea, which lessens the capacity of those tubes, induces simultaneously the sensation and the closure, complete or partial, of the glottis, that an increased impetus may be given to the volume of air expelled by coughing. This closure of the glottis may prevent the escape of the foreign body, and likewise the admission of air, while an artificial opening surrounded by no muscles allows both.

The principle on which the phenomena above mentioned depend is the consent of action or sympathy of feeling which exists between the organ and its outlet. If motion be the function concerned, the outlet relaxes when the organ contracts moderately, but holds tight when it (the organ) acts violently. If sensation be the function especially concerned,

---

curious to learn its cause and precise location, and accordingly addressed myself to the investigation. Reflecting that the application of an extraneous substance to the rima glottidis is the most simple, palpable, and certain physical cause of coughing, the object of which is to drive away the offending substance by forcibly impelling against it a volume of air; that the contact of this body must induce a change in the condition and action of the capillaries of the part touched, and that the perception of this change constitutes the sensation which advertised the necessity for a current of air to force that body away; that, as coughing frequently occurred in the absence of this, its true physical cause, whose presence was not therefore at all necessary to the production of the sensation or cough; that both were caused by whatever affected the passage of air through the bronchi (whether external pressure or internal irritation) by lessening their diameter, and, of course, retarding the passage of air through them; and recollecting a case in which an indomitable cough was excited by a tumor which distorted or deflected the trachea,—it was inferred that pressure on the trachea, if sufficiently strong to affect its calibre, would, as well as irritation of any other kind, induce the sensation and the cough. Reasoning from analogy, the inference was apparent, that, in a state of health or freedom from other causes of irritation, this expedient might be resorted to as a means of settling this question, and it was so employed with entire success; for it enabled the experimenter in his own person to excite, whenever he pleased, the sensation and the cough, and by repeated trials to locate the former in the posterior part of the larynx, and infer that it was owing to the action of the small muscles situated in the vicinity of the arytenoid cartilages.

and the action of the organ vehement, pain will be felt at the termination of its outlet; but, however violent the action of the bronchial system, there is neither pain nor inordinate resistance, when an artificial opening has been substituted for the glottis, which is another reason indicating the propriety of the operation.

The second principle to which we have alluded is, that the sensibility of an outlet, like that of every organ, tissue, and structure, has a special reference to the conservation of the part over whose welfare it is destined to watch, and therefore it takes cognizance of, and alarm at, the presence of such agents as are likely to injure its structure or disturb its normal action. For instance, if an extraneous body, the cause most apt to injure the glottis, come in contact with it, whether from without or within, nature, not knowing whether it will or will not pass, or what harm it may do, instinctively closes the rima to prevent its entrance. This closure of the glottis is effected by the contraction of the muscles about that aperture, which contraction and consequent closure, on the approach or contact of an extraneous body within the trachea, prevents its escape.

Now, if this extraneous body, as in a case of croup, be a portion of the false membrane, mucus, or muco-purulent matter, abnormal in quantity or quality, the consequence will be the same; the rima will close, and the matter cannot pass, —consequently the patient will die, unless an opening is made, through which, unaffected by muscular action or the conservative principle, these matters may be discharged.

This spasmodic contraction of the muscles about the glottis, like all other inordinate muscular contraction, may be and generally is followed by a spontaneous relaxation proportionate to the previous contraction; hence the remissions which so frequently occur in cases of croup, and also in those from the lodgment of extraneous bodies in the air-passages. These remissions, flattering to friends, and sometimes to the medical attendant, are, nevertheless, deceptive; for although the glottidean muscles have relaxed, and the

rima becomes patulous, the instant the extraneous matters or body come in contact with this fissure, it closes and prevents their passage; but the artificial opening, subject to no such contingencies, allows them an exit.

To recapitulate: the contracted condition of the tracheal tube and further diminution of its cavity by the adventitious membrane, the partial, sometimes complete closure of the glottis by actual invasion of the disease, by spasm or the entanglement of detached membrane, preventing in a greater or less degree, the ingress and egress of air to and from the lungs, constitute the *first* contingency which invokes the aid of surgery; the transuded fibrine and the secreted mucus, or muco-purulent matter, which act as extraneous substances in the bronchial tubes, the *second;* the repose or remission of action of the organs involved, the *third;* the easy application of remedies to the seat of the disease, the *fourth;* these, with the modifications of function, proceeding from the relation which obtains between a viscus and its outlet, and also from the conservative principle with which every organ and part are endowed, comprise the several causes of danger presented by croup, and which require the operation of tracheotomy. For the passage of air, the discharge of extraneous matter, the repose of the organs and the application of suitable remedies, a sufficient opening is required, because that made by nature, the glottis, is not adequate. If the passage from the bladder, the uterus, or the rectum be materially obstructed, the surgeon, in order to save life, or to afford temporary or permanent relief, does not hesitate to make an opening, which may serve as a substitute for the natural outlet; and if the bronchial system be one of the hollow viscera, with an outlet subject to the same laws of action and feeling, does not analogy and common sense dictate, and experience and science sanction the dictum, that under similar circumstances a similar mode of treatment should be adopted and pursued? Is not, then, an operation which makes an opening into the larynx or trachea adapted to the nature and necessity of the case, and

therefore an appropriate remedy in this disease? The foregoing considerations and reasons seem to us to solve the first problem, and justify an affirmative answer.

Having contemplated the objects of the operation in the abstract, and traced out the contingencies and accidents which have a bearing upon its propriety and adaptation to the accomplishment of those objects, we proceed to consider the second problem, viz., the pathological condition and state of the patient, which, on general principles, warrant or forbid its performance in each individual case.

Although we have spoken of tracheotomy as a remedy in croup, yet we are well aware that it is to be regarded more as a preventive of death than as a curative of disease, and with this view, we believe, the surgeon generally proceeds to its performance. To understand, then, fully the principles which warrant or forbid its performance in particular cases, involves a knowledge of the manner of dying it is designed to prevent; which, we opine, is death by apnœa.

Now, death by apnœa is death by privation of breath; or, as one author has it, "death by privation of air inhaled or expelled in respiration," and is produced in croup, as in all other cases, by the non-admission of a sufficient quantity of respirable air for the ventilation of the blood; and, *e converso*, by the retention of that which is no longer fit for respiration, and consequently poisonous to the system.

From what has been stated, it will appear that both these contingencies, which, in fact, amount to the same thing, may arise in this disease from mechanical obstruction. When induced by this cause, inspiration first and principally suffers, while expiration is less materially affected; hence, the evils from mechanical obstruction obtain primarily, i. e., in the first or early stages of the disease, and those from vitiated air, which poison the system, prevail in the subsequent or later periods, and may be regarded as the direct consequence of the former. To prevent both, and particularly the latter, we recommend a timely opening into the larynx or trachea; and it is difficult

to conceive why it should not succeed in a majority of cases.

Although these contingencies appear really and truly to warrant the operation, yet there seems to be something so repulsive in the very idea of attacking the throat of an infant, or child, knife in hand, that parents, friends, and bystanders all shudder at the very proposition; and the surgeon himself, though inured to scenes of blood, recoils from the deed. The operation is therefore delayed, perhaps not performed at all, or only when all other means have failed, and will itself most likely prove unsuccessful, not from any fault which attaches to it, but from having been put in requisition as a "dernier ressort," and at a time when a hope of success could not be reasonably entertained. Even if performed under these circumstances, a consolation is to be derived from the fact, that if it has not saved, it has not shortened life; and I will add that, in every instance within my own observation or knowledge, it has considerably mitigated the sufferings of the little patient; so much so, that no one has regretted its performance. And furthermore, that sometimes it seemed to prolong life, and strengthen the hope that it would be ultimately successful; a hope which has been too often sadly disappointed. If, in these cases, the operation had been earlier performed, a different result might have been obtained; for, besides the rest, and consequent mitigation of the symptoms, time would have been given for the use of remedies, by which the disease might have been cured.

From this digression, let us return to the consideration of the phenomena which not only attend death by apnœa, but augur its approach, and show forth the conditions and pathological changes which have an important bearing upon this part of the subject. These are a turgescence of the veins of the head and neck, change of color in the face, particularly the lips; also in the hands and nails; the faltering pulse, the failing action of the heart, and laborious breathing. Beyond these phenomena, indicative of impeded cir-

culation in the lungs, the surgeon should, however, look for those physical and pathological changes which more particularly authorize or peremptorily forbid the operation; changes dependent on the movement of the blood, whose circulation is essential to the continuance of life. Now the fact has been fully established by modern pathologists, that, in death by apnœa, the stagnation of the blood commences in the capillaries of the lungs; that there its circulation ceases, and there death begins.

In each particular case of croup in which this operation is meditated, we should therefore strictly inquire into the state and condition of those organs which tend to interrupt the circulation of the blood, taking care to keep in mind the fact that the function, proper and peculiar to them, is subservient to that of circulation. Has, then, the disease caused hepatization of the lungs, or an infiltration of serum into the interstitial cells, or extended into the bronchial vessels so far as to interfere with respiration, and of course with the capillary circulation? Are those minute bronchial tubes, and the air-cells to which they lead, loaded with matters which act as extraneous bodies, and which prevent the due aëration of the blood, or retard its movements? Lastly, is there still remaining strength sufficient for their expulsion and continuance of the circulation, provided an adequate opening was made? If the nervous and vital energies, on which circulation and respiration depend, be irretrievably gone,—if the state of the lungs disqualify them for respiration,—trache otomy is certainly forbidden: but so long as the motions of the heart are carried on with vigor, and the respiratory movements also are accompanied with the manifestations of strength, they furnish evidence that sufficient recuperative power remains to warrant the performance of the operation; but when the heart begins to flag, the pulse to falter, and the respiratory movements become less vigorous, there is reason to apprehend a diminution of the powers of life, which will render the success of the operation doubtful; and if, coincident with these, are convulsions, diminution or loss of con

sciousness and other phenomena, which we have particularized in a former part of this paper, the case is apparently, perhaps, not quite hopeless. It is, however, possible that, even under such circumstances, the operation, although a "dernier ressort," a "forlorn hope," may save the patient; and when friends, after a full and candid explanation, desire it, the surgeon may not, in hardly any case, withhold it.

I am fully aware that the foregoing views seem to clash with those entertained by celebrated practitioners of medicine and surgery in this and other countries, and also with those promulgated by some of our most esteemed writers; but it is not our purpose to wager battle with them on the old battle-ground, or "try conclusions" with them on their own principles; but, in a measure, to make a new issue, viz., the propriety of the operation, performed in good season.

Some of the opinions advanced by authors, we propose briefly to examine in reference to this point, particularly those of Dr. Watson, which, it is believed, have had quite as much, perhaps more influence, in swaying the judgment of medical men in this country against the performance of tracheotomy in croup, than those of any other writer.

The following is his language: "When signs of approaching death have come on—lividity of the lips, coldness of the skin and a tendency to stupor, the question *will* obtrude itself whether there may not still be a chance of saving the patient by performing tracheotomy." "The existence of this preternatural membrane and its extension so far down that air would not be admitted into the lungs even when the incision into the windpipe was made at the lowest possible point." "Another consideration forbidding much hope from this expedient at any part of the disease, is, that the ramifications of the bronchi and the ultimate air-cells get filled with serous, mucous or puriform matter, or even sometimes with a membranous exudation, whereby suffocation is effected *in the lungs themselves.*" "The membrane in the trachea," he continues, "being tubular, does not entirely exclude the air from those organs; but it does not admit it in sufficient quantity, are all

but insurmountable objections to the operation." These "objections" may all be answered, in the main, by simply stating that the operation, as contemplated by this distinguished writer, comes in too late for any hopeful result; for he says: "When signs of approaching death have come on—lividity of the lips, coldness of the skin, and a tendency to stupor—the question *will* obtrude itself, whether there may not still be a chance of saving the patient by performing tracheotomy." Now our doctrine is that the operation should have been performed long before "signs of approaching death" had caused "the question to obtrude itself," and long before the system had become poisoned and its recuperative powers lost or very much impaired.

But perhaps it will be deemed more respectful and candid to consider these "objections" *seriatim;* and, 1. "The existence of the preternatural membrane, its extension," &c. The formation and extension of this membrane and the attendant circumstances do, in our opinion, call for the operation, for the purpose of detaching and removing it as an extraneous substance, which could not, for obvious reasons, have been accomplished through the rima glottidis, and also for the admission of more air, and for the direct application of suitable remedies, as the solution of the nitrate of silver, which certainly has a powerful influence in preventing or detaching these exudations.

2. "The ramifications of the bronchi and the ultimate air-cells get filled with serous, mucous, or puriform matter," &c. This objection, we think, has been already answered.

3. "The membrane in the trachea, being tubular, does not entirely exclude the air, but does not admit it in sufficient quantity." This condition we admit, but beg leave to suggest that air passes into the trachea through the rima glottidis only, which is more or less affected by spasm, or involved in the disease itself; therefore, the quantity admitted is insufficient to sustain life. If, under such circumstances, an artificial opening be made, which is not subject to any of the contingencies mentioned, more air will certainly be admitted

and find its way into the trachea and bronchi through the two openings than through the glottis only, which is narrowed by the causes alluded to. Is not the chance of life, then, doubled by the operation? To all of Dr. Watson's objections, we repeat, that the *early* performance of the operation is the answer. It is, in fine, to be regarded as anticipating or obviating them, or the conditions on which they depend. In candor to Dr. Watson, we ought to add, that in his view there are "just two predicaments in which there is a chance that tracheotomy may be useful. That they are perhaps rare, yet they have been noticed by several observers. The one is where the preternatural membrane extends but a very little way down the trachea, and is chiefly confined to the larynx; and the other is where there is no preternatural membrane at all, or only a slight coating in some part of the trachea, the impediment to the breathing having arisen mainly from a thickening of the mucous membrane." "Unfortunately, we cannot tell, before death," whether these "predicaments" exist or not.

The author of the article on croup, in the Library of Practical Medicine, tells us that—"it is not necessary to discuss the question of the propriety of resorting to tracheotomy in croup, as it has been decidedly negatived by Dr. Cheyne, Mr. Porter, and other best authorities." A very summary way this of disposing of such an important topic, especially in an elementary and standard work, and at a time when the spirit of investigation is reëxamining everything. "There does not seem," says Dr. Copland, "to be a chance of success from this operation (tracheotomy), in any case wherein the treatment developed above has failed"; and Dr. Elliotson says that "bronchotomy can only be a temporary measure." These opinions must pass for what they are worth.

Having considered at length the various matters which relate to the expediency and propriety of performing an operation for the relief of persons affected with croup, and the circumstances under which it should be performed, the next subject of legitimate inquiry, challenging our attention,

would seem to be—what kind of operative procedure is best adapted to the exigencies of the case?

In accordance with the usages of surgery, the foregoing remarks have been chiefly confined to tracheotomy, but they are, nevertheless, equally applicable to laryngotomy, which we deem the preferable operation, although not so regarded by the profession. To us it has always seemed that the superiority of the latter over the former has been strangely overlooked.

The reasons, why we have always preferred laryngotomy are—1. Because making an opening into the larynx through the crico-thyroid space is easily and safely done; and, in an emergency, by almost any intelligent practitioner. 2. Because, with certain modifications, it is fully competent to answer every purpose.

Should this simple opening not meet all the exigencies of the case, it may be made to occupy the whole crico-thyroidean space (which, according to Velpeau, is about five-twelfths of an inch in the transverse, and a little less in the longitudinal direction, but, according to our admeasurement, considerably larger), or be still further enlarged, with perfect safety, so as to extend laterally three-eighths of an inch from the median line on each side; the thyroid cartilage also may be slit up nearly half an inch, and the corners clipped off, without injury to the *cordæ vocales* or any other part of importance.*

* For the removal of extraneous matters, in young subjects, besides freely opening the crico-thyroid space, I have in several instances slit the thyroid cartilage a little way upward, and also divided the cricoid cartilage and two or three of the uppermost rings of the trachea downward, with complete success. In some of the cases, the isthmus of the thyroid gland must have been freely trenched on, and I doubt not entirely divided, with no alarming hemorrhage, the vessels in this part being, in young children, so small, that little or no danger of hemorrhage is to be apprehended, especially if the incision be made in the median line. Indeed, there is in such subjects less risk of dangerous bleeding from wounding this part than is generally supposed. If, however, the blood should flow rather profusely, it is soon checked by raising the patient to a sitting posture; and if the opening into the larynx or trachea has been injudiciously made before the bleeding has ceased, he should be bent forward; for gravitation, co-operating with this position, tends to check the flow of blood, and prevent its being drawn into the trachea.

From the accompanying diagrams and anatomical specimens, it will be clear that an opening, made by enlarging the crico-thyroid space laterally, and upward, partly through the thyroid cartilage, and cutting off the angles as recommended, will be as large or larger than the rima glottidis, and therefore give passage to as much air as in health,* or exit to an extraneous body as large as would, under ordinary circumstances, make its way through the glottis.

We are aware that the sides of the rima glottidis are formed of elastic ligaments (the cordæ vocales), and that a foreign body, larger than the apparent size of the glottis, may be, and sometimes is, actually forced through it into the trachea, and that a still larger opening than the one just described may be necessary for its removal; to accomplish which, or any other purpose, the cricoid cartilage itself may be divided in front, and three-sixteenths, or indeed a quarter of an inch, on each each side, clipped off and removed. An aperture as large or larger than the calibre of the windpipe is thus made, which will certainly afford ingress to any required quantity of air, and egress to any foreign body which can have found its way into that tube; and in cases of croup facilitate the removal of the adventitious membrane, or the application of remedies to the seat of disease within the organ.

What more, it may be asked, is required of any operation? Is tracheotomy more competent to answer the purposes in view? But some are probably thinking that our operation will not meet the exigencies of a case in which it may be necessary to insert a tube whose presence in the larynx will not be tolerated. We propose briefly to show how this inconvenience is occasioned, and how it may be obviated.

First, Why is a tube introduced into the larynx through the crico-thyroid space not tolerated?

Because, when thus inserted, its upper and back part (the

* We have examined the diagrams and anatomical specimens alluded to in the above sentence, and find them fully verifying the statement which it contains.—EDS.

angle or curved portion) is so elevated as to impinge against the point at the posterior part of the glottis, to which we have alluded, as the seat of the sensation excited by the presence of an extraneous body,* which sensation occasions coughing and other expulsatory efforts for the removal of the offending cause, whether it be diseased action or really an extraneous body. Now, if a portion of the cricoid cartilage in front, and, if need be, a portion of the uppermost ring of the trachea (the anterior face of which is much broader than the posterior), be removed, the tube, when inserted, will fall below the aforementioned spot, and be borne quite as well as if it had been lodged in the trachea. But why insert a tube at all, and for what purpose? The object, undoubtedly, is to secure or keep open a passage, through which respiration can be carried on, which, we believe, is accomplished by our operation without the tube.

The cricoid cartilage, as its name imports, is a complete ring, with a signet or seal at its posterior part, which renders that much the thickest and strongest portion of the circle; thicker and stronger behind than in front, and imbued with an elasticity which resists the inward tendency of the lateral parts, and keeps their divided extremities asunder, thus preventing the closure of the opening made by the surgeon, and rendering it sufficiently free for all temporary purposes—superseding the necessity for the tube.

But how stands tracheotomy in relation to this particular? The deficiency in the rings at the posterior part of the trachea, occupying one-third of its circumference, is filled with elastic membrane, and a layer of muscular fibres, which run transversely from side to side across this deficiency; these, connecting and acting on all the rings, with the elastic fibrous tissue which commingles with the constituents of this cylinder, give its sides a tendency to approach each other, which is resisted by the integrity of the rings; but when these are divided in front and this integrity destroyed, as in tracheoto-

---

* See note on page 18.

my, the parts imbued with elasticity bring the cut surfaces together and close the opening, unless prevented by the insertion of a tube or some other mechanical contrivance. Concerning the operation we propose (for legitimate surgery bases every operation on the anatomical structure of the part —the field of its execution), ask the anatomist, and he will tell you, in addition to the reasons urged in its favor, that there is no depth of soft parts to be cut through; no danger of wounding either anomalous arteries, or arteries in their place;* no danger of bleeding from wounding the thyroid body, for it need not be touched; no danger of blood getting into the larynx or trachea, for little need be shed (besides the operation should be performed in such season that, in case of hemorrhage, the surgeon may wait a little until it ceases before he opens into the larynx, without periling the life of his patient); but he will tell you that all these difficulties and dangers are incurred when tracheotomy is attempted. Anatomy has indeed settled this question; but surgery has gone on performing an operation against which so much may be urged, and in favor of which so very little can be said.

When an operation is proposed in croup, the debilitated state of the patient may be such as to require the utmost caution in regard to hemorrhage. In laryngotomy there need be but little loss of blood, a consideration of vast importance in cases of exhaustion. In tracheotomy a considerable quantity is almost necessarily lost,—a quantity which of itself alone may, and I doubt not has, often turned the scale against an enfeebled patient,—a quantity which no physician would run the risk of taking, even in the gentlest manner; and should the surgeon who performs tracheotomy, and not only subjects

---

* The anatomist may indeed tell you that there is a small artery, the inferior laryngeal, which crosses the crico-thyroidean space near the lower border of the thyroid cartilage, which can generally be pushed out of the way of the knife, or seized with the forceps and torn asunder, and the lacerated extremities turned aside laterally, which, in ninety-nine cases in the hundred, will stop the flow of blood.

his patient to the loss of blood, but inflicts upon him the terrible violence of a severe operation, stand reproachless? Can the patient be expected to survive the loss of blood and the infliction too, when either may destroy him? This, I fear, explains the reason why so few have survived, and why so many medical men doubt the utility of surgical interference. Probably the delay to the last extremity should come in for a part of the odium.

In croup, there is an adventitious membrane, forming a tube within the trachea, which of itself is sufficient to destroy life; but this is not enough: tracheotomy is performed, and another tube, much worse every way than the one formed by the disease, is introduced; a tube which prevents the application of remedies to the inside of the windwipe, and also the removal of the false membrane, or other matters, except such as can flow through it; a tube, the blocking up of which has caused, and may again cause, asphyxia and death. But if the operation we propose (laryngotomy) be substituted, the insertion of a tube we believe to be seldom necessary; for when a portion of the cricoid cartilage is removed, as recommended, the elasticity of the remainder keeps the aperture from closing, as long as the exigencies of the case may require. This operation, neither dangerous nor difficult to perform, may be executed in an emergency by almost any medical man, and with almost any cutting instrument.—Whereas, tracheotomy, both dangerous and difficult to perform, requires a *bold*, *dextrous* and *skilful* surgeon, and a frightful array of instruments ("a straight or convex bistoury, a blunt-pointed bistoury; several canulas armed with threads, and everything which may be required to attach them; very delicate ring and polypus forceps; several simple ligatures, and some needles; erignes, or sounds curved in the form of hooks, and various articles of dressing") for its execution; and is, moreover, attended with a delay perilous (and, as I have witnessed in one case, fatal) to the patient, as well as inconvenient to the operator.

Our operation affords free ingress and egress of air, and an easy exit to matters pernicious to life; gives rest, ease,

and comparative quietude to important organs; renders the application of remedies to the seat of the disease practicable; gives time for them and others to operate, and perhaps effect a cure. It does all these quite as well, and we think better, than tracheotomy, and is, therefore, in our opinion at least, the preferable operation.

Besides the removal of the morbid exudation, which is seldom, if ever, the sole cause of suffocation, the leading argument in favor of tracheotomy is the presence of the false membrane in the trachea which is thought to be the principal cause of mischief; hence the necessity of an opening into that organ, which might be partly below the obstruction, while an opening into the larynx would be above it, and consequently useless; but our view of the matter is, that the glottis, affected with spasm, or involved in the disease, or both, interferes with respiration more dangerously than the membrane. We, therefore, all things considered, have come to the foregoing conclusion.

P. S.—We have performed the operation above described (modified to meet individual cases) a considerable number of times (perhaps some fifteen or twenty), and have always found it to answer perfectly well, whether the object was to facilitate respiration, or the removal of extraneous bodies; and have never had recourse to the tube or any other mechanical contrivance for keeping the opening free, with the exception of a strip of adhesive plaster, applied close to each side of the wound, drawn backward and crossed on the nape of the neck, to retract the integuments when they obstructed the passage of air or other matters.

In order to prevent, as much as possible, the inflammation which, from the admission of cold air into the bronchi, so commonly follows these operations, it is a rule with me to direct the temperature of the patient's room to be kept steadily up to 80° Fah. The hint for this was suggested to me many years ago by an unprofessional man, and I have acted upon it with much satisfaction in the treatment of other affections of the lungs of an inflammatory or irritable nature.

ART. III.—*Radical Cure of Reducible Inguinal Hernia, after the method of* C. W. WUTZER, M. D., Director of the Surgical Hospital, and Professor of Surgery at the *University of Bonn, Prussia.* By J. E. WEBER, M. D. [With a wood cut.]

THE numerous methods proposed for the cure of reducible inguinal hernia, and recommended by modern surgeons, show most clearly how little any one method has answered the purpose. There are a large number of experienced surgeons, who regard every operation for the cure of reducible hernia as unjustifiable and hopeless, or who at least undervalue it. The reason seems to be, that they demand almost an impossibility from such an operation; and since this cannot be achieved, they undervalue the utility which the operation undoubtedly has. Let us now inquire what the operation after Wutzer's method can accomplish, and we can then decide whether, with proper indications, those who suffer from this ever dangerous affection can be benefited by this new operation.

The method of Wutzer is the application of an instrument (a cut of which is here shown), with which he designs to close the inguinal canal, by invaginating a portion of the scrotum by exercising an equal mechanical pressure upon the entire inner surface of the inguinal canal, which may be at any time increased or diminished, as the individual case requires. He would produce the necessary adhesive inflammation for retaining the invaginated portion of the scrotum, and effect adhesion of the hernial sac, without running the risk of causing an inflammation of the peritoneum, thus endangering the life of the patient.

It is necessary to possess such instruments of various sizes, particularly the cylinders, in order that they may correspond to the different diameters of the inguinal canal of each individual case. The cylinders should not be too small, as it is of great importance that the inguinal canal should be properly filled out by them, so that an equal degree of pressure shall be exerted in every direction on the internal

surface of the hernial sac; they should not be, on the other hand, too large, because the cylinders are to be introduced up the internal inguinal ring. Wutzer calls his instrument the *invaginatorium herniale.* (Fig. 1.)

The operative procedure.—After the inguinal parts have been shaved, and the rectum and bladder have been evacuated, the patient is placed in the same position as in that for lithotomy. Then the instrument should be prepared for operating, by taking the plate apart from the cylinder (Fig. 1, *a* and *d*), and drawing the needle (Fig. 1 *c*) outwards, so that its point remains concealed in the anterior opening of the cylinder (*a*).

The surgeon stands between the legs of the patient, and first reduces the intestine which fills the hernial sack. When this is accomplished, he places the point of the index-finger of his left hand upon the scrotum beneath the external abdominal ring, with its palm side directed upwards and outwards. He then pushes the elastic parts of the scrotum, which he has taken hold of, into the inguinal canal, so that the point of this invaginated cone extends a little beyond the internal abdominal ring. Then he bends his index-finger, which is thus far introduced into the inguinal canal, in such a manner that a small free space may exist between its palm surface and the upper surface of the canal, into which space he brings the point of the cylinder. By degrees the cylinder is slowly pushed in the oblique direction of the inguinal canal upwards and outwards, and at the same time the finger is drawn gradually backwards, so that the cylinder may occupy the place of the finger. This manœuvre is not without difficulty.

The invaginated cone returns easily with the finger, and the instrument is insufficient to carry back the cone to the desired position. Should the invaginated cone protrude the least backwards, it will then be necessary to renew entirely the before-stated manœuvre, and, to prevent a like occurrence, the cylinder, being reintroduced, must be more closely pressed against the finger. There are other difficulties in

this procedure, viz., when the internal abdominal ring is small, preventing the cylinder with the finger from passing its entrance; in large and old hernias, it is still more difficult, because the cylinder may be carried into the loose cellular tissue between the superficial fascia and the apneurosis of the external oblique muscle. This mistake cannot often be discriminated, and none but a surgeon who has a perfect knowledge of the surgical anatomy of the parts, and who is a careful operator, will easily overcome these difficulties.

As soon as it has been ascertained that the cylinder properly fills up the inguinal canal, the needle (*c*) is then pushed through the integuments; no bleeding will follow, as the point of the needle is three-edged. The plate (*d*) is now joined, by allowing the needle to escape through its anterior opening (*n*). The staff (Fig. 2 *k*) through the posterior (*l*), and the posterior screw (*e*) in the forked hinge (*g*). By means of the screw (*f*) of the staff, the plate is moderately pressed down against the skin, fixing its position by means of the posterior screw in the forked hinge. The operation is now concluded by screwing off the handle (*b*) of the needle, and by covering the point of the needle with a small piece of cork. Under the scrotum a small pillow should be placed for its support.

The patient should be confined to bed in an easy horizontal position, with flexed knees, and a pillow under them. The after treatment should be directed cautiously; on the one hand, no impediments should be allowed to hinder a sufficient degree of inflammation; and on the other, the inflammation should be arrested when proper.

A few days previous to the operation, it will be proper to direct an antiphlogistic diet, and after the operation to cause an increase of the natural evacuation from the bowels. An antiphlogistic treatment will not be necessary if the patient is quiet, and has no disposition to the inflammatory diathesis. The screw which presses the plate against the integuments of the inguinal canal can every two days be tightened, al-

though prudence requires the plate to be lifted every time, in order to ascertain the degree of the existing inflammation. If the inflammation should be found to be more intense than was intended, either the pressure must be taken off or the instrument removed. Generally, it is not necessary to use the instrument longer than six days, which time is sufficient to produce the required adhesion between the invaginated parts and the hernial sac. If the instrument remains too long, instead of the required adhesion a disastrous suppuration and gangrene near the needle may be produced. In irritable individuals, six days may be too short, and in torpid it may be too long a period.

When the instrument is to be taken away, the plate must be first removed; the handle should be screwed to the needle, and then drawn out. The left hand has to fix the invaginated parts, the right hand must cautiously remove the cylinder. The small cavity remaining from the invagination must be filled with soft dry lint, which should be held there by means of adhesive plaster. The suppurating punctured wound, on the place where the needle was, must be treated upon general principles; the patient must remain in bed not only until the wound has cicatrized, but at least eight days longer, in order that the new adhesions may be greatly strengthened. In the inguinal canal a hard plug will be felt, which will be absorbed, and, after a lapse of some time, can scarcely be perceived. The radical cure is permanently established when the adhesions have taken place in the circumference of the entire inguinal canal. The hernial sac cannot leave the place into which it has been pushed by the invagination, as the needle has perforated it at two opposite points, and produced an inflammation between the serous surfaces sufficiently strong to secure at least, at those two points, firm adhesions. Wutzer* considers it very important that his needle attack in this way the hernial sac, and thinks

* Organon für die gesammte Heilkunde. Bonn, 1840. Vol. i. sec. 1.

it very remarkable that Gerdy* (who also operates by invaginating the scrotum, for the cure of a reducible hernia, and who perforates also by means of a needle the invaginated scrotum at the highest place to which he has pushed it) should state that his needle never touches the hernial sac. Wutzer says that it is contrary to the anatomy of the parts, and thinks that if it were really so, Gerdy deprived himself of the most important means to secure the success of the operation. Wutzer recommends it as prudent, in order to strengthen the permanent nature of the cure, to direct the patient, as soon as the cicatrization is completed, to wear a slightly pressing truss during three months. This will prevent the invaginated parts, while new adhesions are yet fresh and tender, from coming down to their original place. During the same time, it will be advisable that the patient should not engage in any heavy work.

The following case, the description of which is taken from the *Organon für gesammte Heilkunde*, vol. i. sec. 1, was operated upon by Wutzer after his method, and was cured. It may serve as an example:

Nicolaus Wolff, thirty-four years of age, a farmer by occupation, had contracted an inguinal hernia on the right side three years before by lifting a heavy load. On the 4th day of October, 1838, he was admitted to the Surgical Hospital at Bonn, suffering from secondary syphilis, of which he was relieved after having undergone a strict medical treatment. After the lapse of a considerable time, that his health might be completely restored, it was resolved to try the above-described operative procedure for the cure of his inguinal hernia. The man very willingly submitted to the chances of the operation, as he had already for some time been unable to do any such work as his occupation peremptorily required. The cause of this was, that the inguinal canal and the abdominal ring of the affected side were so much extended and

* Schmidt, Jahrbücher, Vol. xiii. 375.

enlarged, that the best fitted truss could not retain the contents of the hernia. For, after any severe exertion, a part of the bowels invariably appeared before the pad.

On the 8th of November, 1838, Wutzer, after having reduced the contents of the hernia, introduced his instrument in the way above described, pushed the needle through, and screwed moderately the covering plate against the cylinder. This procedure was quickly performed; the pain at the perforation of the needle was but momentary and slight.

The patient slept well during the following night, his pulse remaining quiet. On the 10th of November, there was slight pain, occasioned by touching the parts which were pressed by the covering-plate. The covering-plate was now a little more tightened. During the following days not the least symptoms of fever appeared, no pain in the bowels, and consequently no indication for bleeding or any antiphlogistic treatment. On the 15th of November there could be felt a hard inflammatory swelling of the soft parts around the cylinder; at the same time, suppuration had taken place where the needle had remained, and it appeared to be the right time to remove the instrument. After this had been done, the invaginated parts presented themselves entirely fixed, remaining as a firm plug in the inguinal canal. Where the needle had perforated the skin, the same was for a small space black and mortified, so that an opening was created, which allowed two probes, of which one was introduced at this opening, the other into the canal of the invaginated part of the scrotum, where the cylinder had been before, to meet each other. All the water injected into the external opening of the canal and invaginated parts flowed out at that opening, as there was now a perfect and free communication between these parts.

The patient continued to keep his bed until the 18th of November, when the cicatrization of the little wound was so far advanced as to allow him to sit up. In a short time, when the wound was completely healed, a slightly pressing truss was applied to the parts, and on the 29th of December

the patient was discharged from the hospital perfectly cured, the most accurate examination showing no sign that a hernia had ever existed.

The first description of this procedure was presented by Wutzer in the *Organon für die gesammte Heilkunde*, vol. i., series 1.* He narrates there five cases, of which three were perfectly cured, the other two resulted in no benefit. He added to those an exact history of all operations performed for the cure of reducible inguinal hernia, which is highly interesting. After having followed this, his own method, now more than fifteen years, Wutzer says, in the *Deutsche Klinik*, edited by Goschen, 1849, vol. i., page 32, that he has every reason to be satisfied with the proportion of those he cured to those he discharged unrelieved, particularly when he compares the results of his method with those of all others. This assurance of Wutzer, which comes not from a beginner in surgery, but from a man who already enjoyed the highest reputation as a surgeon, is certainly to be relied on. I wish to add, that he, as a professional man, has very few equals; that he ranks foremost among the most distinguished of our profession, and that an assurance from such an authority is not to be regarded as a figure of speech.

Wutzer collected his first experience during the war with Napoleon, on the same battle-fields that made Larrey's name immortal; and if France can boast of Larrey, Germany can boast of Wutzer. After Wutzer had recommended his method, Seutin, in Brussels, was one of the first who tested it in practice. He operated on eight patients, four of which were cured, as he informed Wutzer, in May, 1840, by letter. Rothmund, in Munich, treated over forty cases, and makes known the astonishing success that he experienced in *Haser's Archiv*, vol. ix., series 2.

During the time that I held the appointment of Assistant Physician of the Emigrant Hospital at Ward's Island, I had

* Edited by Prof. Naumann, Kihan, and Wutzer, Bonn.

occasion to try Wutzer's method four times; two of these cases were perfectly cured, one was relieved so that a truss was able to retain the bowels, one was not cured. Wutzer, himself, has every year, for the last fifteen years, treated many cases in presence of numerous spectators. His operations were in the greatest number of cases successful, in some unsuccessful; but never was the life of a patient endangered by his operation.

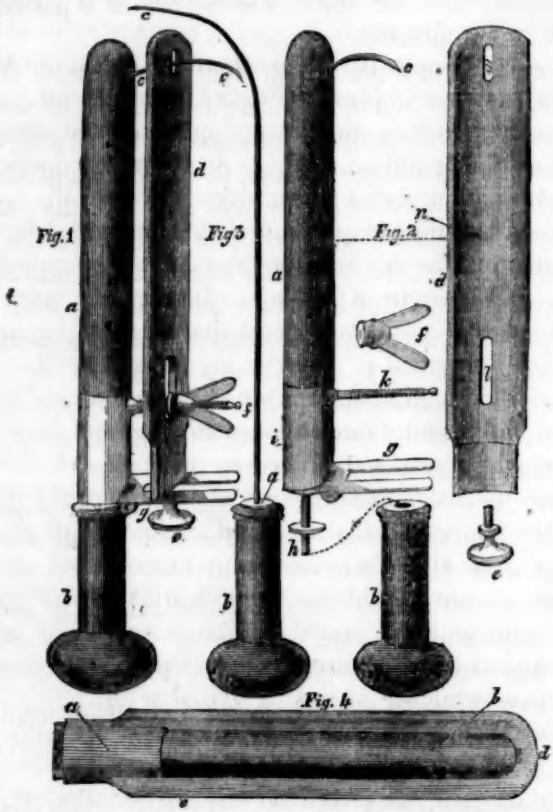
Contrary to these experiences, there is Lotteau, in Ghent, who endeavored to improve Wutzer's method, but with so little success, that his patients were more afflicted afterwards than before the operation. Lutens, in Antwerp, operated on a syphilitic patient twice in ten days, and after the unfortunate patient had died of peritonitis, he condemned the operation, believing that his unjustifiable haste to operate had no influence on the result of his case. In America, after I had treated four cases with the success above stated, a gentleman of this city undertook it once in my presence. In consequence of the rough manner in which he introduced the cylinder, he ruptured by force the entire inguinal canal. His operation was of course followed by no success.

Wutzer, in recommending his method, never wished to convey the impression that it would answer for all cases; he knows too well that there are many cases of reducible hernia which are not suitable for *any* operation. It is just here that the surgeon needs sound judgment to decide whether an operation is to be undertaken with a promise of success or not. It is no evidence against a *method* of operating, that it was undertaken where it was evident that *no* operation could be successful.

Should any one ask of Wutzer's operation what it is impossible to achieve,—should he ask that a perfect cure should be realized where no inguinal canal is in existence, as when the internal and external ring have joined to one large opening, or where age or a cachectic diathesis makes a person unfit for *any* operation,—he will be disappointed.

After all, it can be unmistakably said, that, under all cir-

cumstances, where a rational surgeon would allow any operative procedure for the cure of reducible hernia, Wutzer's operation affords, more than any other in existence, a surety of success; the greatest importance resting in the fact, that, by governing the instrument rightly, the surgeon has it in his power to increase or diminish the intensity of the intended



adhesive inflammation, which no other method in the same manner affords. Wutzer wishes his method tried without prejudice. The purpose of this article is to make this operation known in my adopted country, for the benefit of those who are in need of the radical cure of reducible hernia. Although there are many who boast of the ease with which

the hernia may be retained by certain forms of truss, still the frequency of the operations for strangulation, occurring in spite of the instrument used for keeping the gut within the cavity of the abdomen, teaches us the inefficiency of the most valued truss in many cases; and exhibits the propriety of attempting to remedy the liability to this ever dangerous occurrence by the most sure and effectual operation known.

To sum up what may be said with strict truth of this plan of my former preceptor, it is only to be added: 1. With the right indication for operating, Wutzer's method effects a number of cures, greater than any other plan hitherto pursued, and that, too, without endangering the life of the patient. 2. In those cases where the condition of the parts makes a *perfect* cure impossible, this plan will give such relief as will render a truss effectual in retaining the bowels.

With these remarks, the plan is submitted, with the earnest hope that the profession in America will give this operation a fair trial, which has won the approbation of nearly all the best surgeons of Europe.

EXPLANATION OF THE FIGURES.

FIG. 1 represents the complete instrument, called Invaginatorium Herniale. *a*—Cylinder, with its anterior end becoming smaller. *b*—Handle of the needle. *c*—Curved point of the needle, passing out of the anterior opening of the cylinder, and through the anterior opening of the plate, which covers the cylinder. *d*—The covering-plate itself. *e*—The screw which fastens the posterior end of the plate to the forked pedestal. *f*—The screw which presses down the covering plate against the cylinder. *g*—The forked pedestal, the slit of which receives the posterior end of the plate; a hinge unites a metal covering of the posterior end of the cylinder. The metallic parts of the instrument are to be made of a non-oxygenizing metal, with the exception of the needle, which should be of steel.

FIG. 2. The instrument taken apart. *a*—The cylinder, made of box-wood or ivory; upon the upper surface of the anterior end is a small round opening, in which terminates a metallic canal, running through the middle of the cylinder, and made for the reception of the needle. *b*—Handle of the needle. *c*—Point of the needle. *d*—The plate, made of the same material as the cylinder. *e*—The screw which fastens the plate to the pedestal. *f*—The screw which presses the plate against the cylinder. *g*—The forked pedestal for the reception of the screw. *h*—The posterior end of the needle, with a metallic screw taken

from the corresponding end of the handle (*b*). *i*—The metallic covering of the posterior end of the cylinder for fastening the pedestal *g* and the staff (*k*). *k*—The metallic staff for the reception in the opening (*l*) of the plate. *l*—The posterior or oval opening of the plate. *m*—The anterior oval opening of the plate for the reception of the needle. *n*—The upper surface of the plate, a little convex.

FIG. 3. The needle of steel, with its wooden handle. *a*—The posterior end of the needle, screwed into the handle. *b*—Handle. *c*—Curved three-edged point of the needle.

FIG. 4. The representation of the proportionate breadth between the cylinder and plate. *a*—The posterior end of the cylinder. *b*—The anterior end of the same, somewhat smaller. *c*—The left lateral border of the plate. *d*—The anterior end of the plate, with a small part of its anterior opening.

All of the figures are one-half the original size.

ART. IV.—*A Case of Extensive Caries of the Vertebræ; Death; Autopsy.* By DRS. LOUIS BAUER and BARTHELMESS, Brooklyn, N. Y.

THE history of the following case is of such an extraordinary nature that its communication to the medical public is at least justifiable, if not a matter of duty:

Edward T——, from Toledo, State of Ohio, when about five years of age, suffered for a considerable period an attack of intermittent fever. He was ultimately cured; but there remained a considerable enlargement of the spleen, and a marked poverty of the blood. A year later he fell on his back; the fall, however, did not cause any apparent injury of the spine; he moved and played about for three weeks without complaining, and enjoyed his usual delicate health. At this time he assumed a peculiar gait, and complained of pains in his back. The alarmed parents placed the little patient immediately under proper medical care, and all proper means were employed to prevent the progress of an inflammation, which was unmistakably established. Besides rest, a horizontal position, and antiphlogistic treatment, an issue on either side of the affected spine was established, but without any beneficial result whatever. On the contrary, the affected spine became deformed posteriorly,

consecutive abscesses were formed on the back itself, near the place of the affected vertebræ, in the left groin, immediately below Poupart's ligament, and on the internal and posterior surface of the thigh, which kept up a discharge, until his death on the 16th of November last.

About two years previously, the right hip-joint became affected, and the head of the femur projected rather more posteriorly and superiorly than normal, as compared with the position of the acetabulum. The parents having consulted a number of noted surgeons, and having ascertained from all of them that the case of their beloved child was both incurable and hopeless, devoted all their time to him in order to render him as comfortable as possible. They travelled many thousand miles, with the patient seated on a low chair having arm-crutches, to give him the benefit of change of air and impressions, which contributed materially to his comfort and mental enjoyment. The intellectual power of the lad became developed rather above his age, and his power of observation was especially increased. His intellect remained undisturbed to his death. In the spring of this year, the parents took the patient to the hot springs in Arkansas upon their own responsibility; but neither the use of various medicines, nor the hot springs, had any effect in staying the progress of the disease. Cod-liver oil was the only drug which acted beneficially by increasing his weight.

In the latter part of October, the patient was presented for examination at the Orthopædic Institution, and the advice of the two medical attendants of that Institution desired. The case-book of this establishment contains the following description of his *status morbi præsens:* General emaciation, considerable loss of flesh, intense paleness on account of anæmia, large posterior curvature of the spine, commencing with the third thoracic vertebra, terminating with the third lumbar; the projection in its highest point showing a distance of about five inches from the perpendicular of the body; the ribs being elevated, particularly the lower ones, which are somewhat turned on their respective longitudinal

axes; the thorax, nevertheless, approaching the pelvis. This accounts for the shortness of the trunk. The movements of the chest are limited by the partially fixed position of the ribs; the abdomen is much distended, and appears more full on the left side; scores of veins are perceptible in the skin; the pelvis has a normal position, and the *rima natum* forms with its transversal axis a right angle; the right hip, however, especially the large trochanter and the head of the femur, occupy a place rather higher and more backward than the acetabulum, and fluctuation within the projecting part is clearly made out. The right leg was thrown up and kept in a bent position at both the hip and knee-joint, besides being adducted. The diagnosis, as regards the actual state of the right hip-joint, was not clearly established, on account of the intense painfulness of the joint and surrounding parts. Chloroform, under the existing circumstances, was out of the question. At the most prominent part of the back, there were two cicatrices from the setons, and two slightly discharging ulcers. In the left groin there was a very large ulcer, of an oblong form, with sinuous margins and granulated walls. The extent, direction, and base could not be ascertained, for reasons already stated. On the right leg there were some other ulcers of a similar appearance, at and below the small trochanter. All these ulcers still continued to discharge a thin yellowish matter, being a watery fluid, mixed with true pus and casein-like substance. The spine was by no means tender. The respiration, as would be supposed, was somewhat difficult, but no morbid respiratory sound was perceptible, nor was there any dullness except at the lower part of the left lung, which, as we shall soon see, was caused by the enlargement of the spleen. The sounds of the heart were weak, but natural; no apparent disturbance of the circulation; no lividity of the cheeks, lips, or nails; no pulsations of the veins; no cough or rattling noise. The abdomen, as already stated, was greatly distended, principally with gas, appetite feeble but natural, egestion regular and of normal appearance. The urine was not ex-

amined, which is to be regretted, as the post-mortem examination showed a fatty degeneration of the kidneys, most likely having produced albuminuria; sleep was rather restless, feverish, and disturbed by colliquative and copious perspirations; the pulse was accelerated, being 125–130, small and weak.

The following is our opinion of the patho-genetic development of the disease: The intermittent fever we consider as the starting-point, which left within the spleen a considerable enlargement, with disorganization, which, however, ante mortem, is rather hypothetical. Disease of the spleen never fails to produce a most dangerous influence upon the chemical constituents and the organization of the blood, consisting principally in a superabundance of granulated blood-corpuscles, producing that state which is known under the term of anæmia, or, as Philipp Von Walther figuratively calls it, *white-blood*. In connection with this state of the blood, tuberculous deposits are of frequent occurrence. The writers presume that tuberculous depositions, within the cancellated texture of the affected vertebral bodies, had been subsequently effected; the fall, sustained, gave rise to a softening of those tuberculous masses, inflammation and suppuration set in, which account for all other symptoms. The sores are considered the external outlets of the fistulous ducts, which lead from the affected bones to the surface. Under these circumstances, we agreed entirely with our medical brethren, previously consulted as to the incurability and hopelessness of the case in question. There are scores of instances on record, where caries of the spine has recovered with true anchylosis, and therefore the prognosis cannot be given invariably as a bad one, provided the carious destruction is limited, and the constitution tolerably good. Our case, however, was the most unfavorable form to be met with; the destruction was unquestionably extensive, and the system entirely exhausted. The parents, however, desired his reception into the Orthopædic Institution, hoping that something might be done for their child, and accordingly the

patient was received into the establishment on the 23d of October. The following treatment was agreed upon: The best animal food, wine, and beer in abundance was given him, besides cod-liver oil and iron, alternately with quinine, rest and good air. We intended to administer every other day a bath with potassæ, and the injection of the bath water into the sinuses, for the purpose of cleansing them; finally, we designed to apply a wire cuirass on the posterior half of his trunk, to keep his spine in an immovable and firm, and his body in a horizontal, position. As the cuirass was to correspond with the different projections of his body, it would have been the most comfortable bed for the patient. But the early decease of the patient frustrated all our plans, and reduced our treatment to the mere diætetic and medical part. The patient, having been only a fortnight in the Institution, was attacked by a most violent fever, swelling of the legs, and consecutive erysipelas, which commenced on his back, and gradually extended over the inferior extremities. Œdema and sugillations came on, to which the enervated body of the patient yielded on the 16th of November.

Twelve hours after death, the corpse was already greatly decomposed, so that the post-mortem examination was fully justifiable at this time. The lungs were healthy; the right ventricle of the heart was large, its walls flabby and uncommonly thin, the cavity filled with decomposed venous blood; the left ventricle was of the usual size, filled with a fibrous coagulation, which extended into the aorta. Stomach and intestines healthy, but much distended with gas. The mesenteric glands intumesced and solidified, but not much enlarged; the liver generally healthy and of usual size,—the parenchyma, however, showed small fatty points in abundance; pancreas indurated; spleen very much enlarged, and weighing forty ounces, which shows an increase of five times compared with the spleen of an adult. Kidneys in the commencement of fatty degeneration (second stage of morbus Brightii). The most surprising degeneration, however, to be found, concerned the skeleton. To commence

with the spine, which of course was laid bare and longitudinally divided in front: it showed tuberculous deposits, and, respectively, cavities of various size up to a small bean, in the bodies of the thoracic vertebræ, from the fourth to the eleventh; the lower ones had outlets, which opened in the principal abscess formed by the fragment of the eleventh thoracic vertebra, a fragment of the second lumbar vertebra, and the superior surface of the body of the third lumbar vertebra. The greatest part of the eleventh thoracic and second lumbar vertebra, and the first lumbar vertebra, had entirely disappeared. Although the various abscesses were located near the dura mater of the medulla spinalis, neither this membrane nor the spinal cord had been in any way affected, but, on the contrary, proved to be in their full integrity. As a matter of course, the cancellated texture of all the vertebral bodies below the fourth thoracic vertebra was engorged with a bloody liquid, and softened. So the intervertebral cartilages were partially destroyed (entirely from the tenth thoracic to the third lumbar vertebra), and partly softened and infiltrated with a gelatinous substance; moreover, they were distended in front, and compressed, and lower in the posterior part, which accounts for the anterior counter-curvature above and below the posterior one. The adjoining cellular tissue, ligaments, and muscles on the lateral surface of the spine, were infiltrated with inflammatory exudations, firm and of a cartilaginous consistence. From the principal osseous ulceration of the spine, two sinuses descended to the groin; the left sinus was so wide that the finger could easily be introduced into it; it followed the direction of the psoas muscle, and opened immediately below Poupart's ligament on the surface of the skin. The right one followed the psoas muscle to the point where it meets the iliaco-internus muscle, then passed over the horizontal ramus of the os pubis, descended outwardly, and entered the right hip-joint, from whence the exit of the matter was effected by other sinuses opening in the thigh; both sinuses were lined and filled with the cheese-like substance.

The left hip-joint was found to be in full integrity, but filled with a bloody serous liquid, which made its escape when the joint was opened. The right hip-joint, however, presented a most peculiar appearance. The acetabulum was enlarged backwardly and superiorly, without its edge being in any way carious or destroyed. The enlargement of the acetabulum had been produced by an inflammatory process on the surface of the gluteus minimus and the synovial membrane, and the capsular ligament had been distended, so as to cover the new articular surface. The head of the femur, which occupied the new place partially, was engorged with the bloody liquid, and so soft, that it took easily the impression of the finger; the ligamentum teres and articular cartilages were entirely gone. The capsular ligament was thickened, and adhered firmly to the surrounding parts. Below the small trochanter, the femur was totally severed by caries from the head; the medullar cavity of the bone was enlarged, and filled with a bloody, but somewhat consistent secretion; the cortical substance was fragile, and exceedingly thin.

The history of the case, and the state of the parts found on post-mortem examination, is in many respects exceedingly interesting, both for surgical science and practice.

1. The case teaches us how much nature may endure, before life becomes extinct, and that she never yields until she has exhausted the materials and resources at her command.

2. That there may be most extensive destruction of the head of the femur, and even, as in this case, entire separation from the thigh-bone, without actual and perfect dislocation, although there was no resistance to the occurrence of that accident. This case, therefore, corroborates the views held on this subject by Professor March, of Albany, Dr. Ross, of Altona, and others, besides our own. The *status morbi* could have been easily ascertained by the use of chloroform; but we deemed ourselves not justified in employing it. Instantaneous death might have followed, and thus increased

the number of fatal experiments with chloroform. We were therefore limited to a superficial examination, quite insufficient to render diagnosis certain in cases like this.

3. A most extensive destruction within the hip-joint may take place without any alteration in the position of the pelvis, provided the lumbar vertebræ are immovably fixed, and do not yield to muscular retraction.

There remains, however, a doubt as to whether the commencement of tuberculous deposit was established before or after the external injury, and it is left to further investigation whether our opinions are correct or not. We, however, believe, that the tuberculous deposits were primarily formed before the injury actually took place; but we admit, at the same time, that we cannot disprove the reverse opinion, namely, that tuberculous deposits have been determined by the injury.

We design in future communications, the materials for which have been accumulating for some time past, to continue our observations upon this interesting and most important branch of practical surgery. If truthfulness and scientific exertion can insure the esteem and support of the medical profession, we confidently trust to merit them.

ART. V.—*On the Radical Treatment of Hydrocele by the Local Application of the Lunar Caustic to the Internal Surface of the Tunica Vaginalis.* By W. PARKER, M. D., Professor of Surgery in the College of Physicians and Surgeons, New-York.

A GREAT variety of methods have been proposed to effect the radical cure of hydrocele, such as, *incision* to lay open the sac, *excision* of a portion of the sac, *caustics* externally applied, *tents* passed through the sac, *injections* of various stimulating liquids, &c. The design in the practice of each of these operations is either to excite such a degree of inflammation as shall cause adhesion of the opposed serous surfaces of the tunica vaginalis and thus obliterate the sac, or so

change the character of these surfaces as to diminish the secretion to its normal quantity.

The operation by injection of a stimulating fluid was one of the earliest proposed, and is now more generally practised than any other, not so much for the ease with which it is performed as the certainty of its effecting a cure. For a long time, wine and water composed the mixture employed, and Sir James Earle, who introduced them, stated that he scarcely ever failed in obtaining a radical cure. But this confidence in injections does not accord with the experience of other surgeons, and Sir Astley Cooper, who used a solution of sulphate of zinc, remarks that it is quite contrary to his own, though he preferred it to any other method then followed. More recently, however, the tincture of iodine has come into use, and having proved more safe and efficient than the liquids previously employed, it has nearly superseded all others. In eleven hundred and forty-eight cases it is stated to have failed but three times; and in ten cases, where both wine and the sulphate of zinc had been used unsuccessfully, it failed but once. Injections, however, of all kinds require tact in their employment, and time in their preparation and administration. When unskilfully used, they are often attended with serious consequences. I have not myself been in the habit of resorting to them for the cure of hydrocele in many years, preferring the simple evacuation of the water with scarifications of the internal surface of the sac, especially in children, or the introduction of a tent. More recently, however, I have resorted to the local application of the solid nitrate of silver to the internal surface of the tunica vaginalis in the manner described below, and have every reason to be satisfied with this method of treating hydrocele. It is at once easily and safely performed, and, as far as my experience goes, has been attended with entire success. It does not seem to induce so great a degree of inflammatory excitement as most other methods. The following may, therefore, be stated as its advantages over other operations: 1. The ease and safety with which it may be performed. 2. The less liability to

severe inflammation. 3. The certainty of success. The following cases illustrate the mode of operating, and the results of treatment:

CASE 1.—Mr. J., aged about 60, an Irishman, waiter by occupation, unmarried, had always enjoyed good health until April last, when he discovered an enlargement of the left scrotum. It had never previously been the seat of any difficulty. The tumor increased so rapidly, that within three weeks it had become a great annoyance, and prevented him, simply from its size, from continuing at his business. At this time I first saw him, and such had been the rapidity of the growth of the tumor, that it had been mistaken for hernia, and he was wearing a truss. On examination, however, its true character, that of hydrocele, was made out without difficulty; a trocar and canula were accordingly introduced, and a large quantity of water withdrawn, and the patient dismissed. In about three weeks he again applied for relief, and I proceeded to operate for his radical cure in the following manner: After drawing off the fluid contents of the tumor in the ordinary way, I introduced through the canula a common probe, the end of which was coated, for half an inch or more, with nitrate of silver. This extremity, thus charged with the caustic, was carried lightly over the serous surface of the tunica vaginalis, in various directions, and then removed. The patient complained of some pain during this part of the operation. He was directed to keep quiet for the pain and swelling consequent on the application of the caustic, and apply cooling lotions, should the inflammation be at all severe. He returned home, but as he suffered but little pain, and the swelling was slight, and as his services could not well be spared, he continued about his business without any interruption. The pain lasted three or four days, when it ceased altogether, leaving the scrotum of its natural size. In this condition it has since remained, with no symptoms of a return of the hydrocele, the cure having been complete.

CASE 2.—Mr. ——, aged about 50, a farmer from Long

Island, has always enjoyed good health, and been able to perform the active and laborious duties of the farm. For nearly two years he has suffered from a slowly-enlarging hydrocele, the origin of which is attributed by the laborers on the farm to the water which they use; for, singularly enough, several of them began to suffer from the same disease at the same time with this patient. The water is stated, by an intelligent person acquainted with the facts, to have a strongly diuretic effect upon those who use it, but no analysis has yet been made of it, which would lead to an explanation of this peculiarity which the water seems to possess. In this case, the tumor had been twice tapped during the last year, and about a pint of fluid was removed at each time. The first operation was performed about six months, and the last nearly three months, previously to the present operation. The tumor rapidly regained its former size after each operation, as no means were employed to effect a radical cure. After withdrawing the water, I proceeded to operate in a manner precisely as above described. The application of the caustic produced severe pain, much more so than in the former case. The patient was placed in bed, and an antiphlogistic regimen prescribed. The pain continued without any diminution of its severity for fourteen hours, when it began to subside. The inflammation excited by the operation was considerable, with swelling of the scrotum and some febrile excitement; he was confined to his bed three or four days, until the inflammation had subsided, when he returned to his farm. The swelling of the scrotum continued about a month, when, on the application of a spirit lotion, it returned to its natural size, and a permanent cure was effected.

CASE 3.—Mr. B., of Penn., aged 55, of very intemperate habits and enfeebled constitution, applied for treatment of an old hydrocele. The operation was performed as in the preceding cases. Considerable pain was experienced at the time of the operation, and the subsequent inflammation and swelling was greater than in either of the former cases, doubtless owing somewhat to his unfavorable condition of

system. It progressed favorably, however, and he was soon able to leave for home. I have recently learned that the operation was successful, there being no return of his difficulty.

CASE 4.—Mr. J. F., bookseller, aged 26, very intemperate, first noticed an enlargement of the scrotum seven months previously to the operation. The caustic was applied, as in the former cases, on the 6th of last August. The pain was considerable, and the inflammation as severe as in the last: it subsided rapidly in the course of four or five days, and he returned to his business. There has been no return of the disease.

ART. VI.—*On the Necessity of Revaccination.* By G. BENEDICT, M. D., Physician to the Northwestern Dispensary, N. Y.

THE complete failure of vaccination in some instances to protect the system against smallpox, and its partial failure in other cases, has led to various theories and practices. Some have in a measure doubted its efficiency, others have rejected it as worthless, while others still have endeavored to discover the reason of such failures, in order if possible to obviate them.

Action has wonderfully corresponded with sentiment. Vaccination has been carelessly performed, and suffered to run its course unregarded, or it has been entirely neglected; or, on the other hand, has been performed with due care and watched with interest.

As yet the fact stands as it ever has done. Vaccination sometimes fails, sometimes it seems to exert a complete protecting influence against a most loathsome and very fatal disease. Hence the question, as to the cause of this, is in truth a very important one. It will hardly do to put it aside, by considering the case analogous to that in which specific remedies for various disorders are employed with more or less general success, and yet with now and then a failure. For we have no so-called specific for any one disease, which is

not also used with more or less benefit in other diseases, so that, in different states of the constitution, it is productive of good results. We have yet to learn that the vaccine infection affords the least protection against any other than the variolous disease. It is said by some to exert a protecting influence against measles, by rendering the attack less severe; but our own observation contradicts the assertion. The mode too of introducing this protecting agent into the system, is different from that of other remedies for existing or expected disease. It is with a view to save the patient from the peril and disfigurement of smallpox that it is employed, and for this alone; and this object we believe it capable of effecting. If we attempt to account for its apparent failure in some instances, on the ground that there is a greater susceptibility to variola in some individuals than in others, we are met by the fact, that many thousands of those who would undoubtedly have suffered from, and succumbed to, the disease, have been saved; and this too when the operation of vaccination has been so carelessly performed. If those only who are least liable to the variolous affection are to be benefited, the great value of the discovery is taken from it. I can conceive no better evidence of the great susceptibility to a disease, and the value of any remedy for it, than I find in the generally admitted fact, that, where once many died, the employment of such remedy has diminished and almost extinguished mortality from such cause. Nor need we, as it seems to me, adopt the opinion, that the changes effected in the system at puberty destroy the hitherto protective power of vaccination. A change it certainly is, from childhood to adolescence; but that the organization of the solids or fluids composing the body undergoes any such modification as to render an active agent inert, or *vice versâ*, is at best hypothetical. It looks too much like the old whim that vaccination should be repeated once in seven years, because in that period its power had all "run out" of the system. The reason is as good in one case as in the other. Comparatively few adults, who were vaccinated in infancy or

childhood, are susceptible of successful vaccination. How does this happen if there is such a change at puberty?

Some stress has been laid upon the number and appearance of the cicatrices, as enabling us to judge of the efficacy or inefficacy of vaccination. Doubtless they indicate more or less the efficiency of the pustules, but they alone are not to be relied on. Nor should we judge from the local intensity of the pustule, that it is sufficient or otherwise; for in different individuals and in different states of the constitution, there is great variety in this respect.

We are not permitted to look into the human organism so intelligently as to understand how and by what means all its changes are effected. The action of remedies on the secretions, *e. g.* in various conditions of the system, though the results are often visible and marked enough, is by no means capable of being fully comprehended. And when we come to the question before us,—how the active existence of one poison is rendered forever impossible by the previous existence of another and different poison,—we hesitate for an answer. The results of experience, however, justify the belief that it is so, and we rest upon this belief as a fixed fact.

A peculiarity in my own person, perhaps not remarkably uncommon in others, has led me to attentive thought and careful observation on this subject. I remember to have been vaccinated in childhood several times, before the presence of the virus manifested itself by the formation of a pustule. It did at length happen, and the cicatrix still remains. While at college, a few cases of variola and varioloid appearing among the students, I was again vaccinated, under the impression, that, as seven and even fourteen years had elapsed, I might now be subject to smallpox if exposed. Here again I received the infection, and had a pustule larger, and, so far as memory serves me in regard to the first, more intense than that. About four weeks from the time of revaccination, and after my arm had entirely recovered from its effect, I again vaccinated myself with lymph taken from the arm of a fellow-student. Again, and so soon after the second

vaccination, I had a large pustule, which went through a regular course, the scab adhering until about the twelfth day. Now here, after the revaccination, I would have been considered as safe as the vaccine disease could render me, and doubtless, had I suffered from variola, my case would have been set down as one of those in which vaccination had availed nothing. And yet was there any reason why I should not have suffered the full force of the disease, had I been exposed? Since that time I have repeatedly inserted the virus in different situations, with no other effect than the slight irritation which is known to follow the scratch of the lancet charged with the poison in those thoroughly vaccinated. My own experience has been partly confirmed by observation. I have revaccinated many children, and quite a number of them those in whom I have watched the progress of the first pustule. I have seen the revaccination unequivocally successful in only eight cases, and in no instance have I been satisfied that true vaccinia was present the third time. Revaccination of adults has been successful in about the same proportion as in children.

My observations have not been sufficiently extensive to establish any new fact, but I make them known that others may observe also, and see if they do not confirm the following proposition:

That vaccination, properly performed, and repeated until the susceptibility to the vaccine disease is exhausted from the system, affords entire immunity from the variolous disease.

It may seem that, by including so much, my proposition is worthless, as it would extinguish not only the genuine disease, but its modification, varioloid. But we are to bear in mind that one, two, or three successive pustules may still leave the system unprotected, at least in part. Vaccination should be repeated until nothing like a pustule can be obtained. Let each one observe for himself, until evidence accumulates which shall sustain or overthrow this position; and let no one say that vaccination is not a protection for those in whom the susceptibility to variola is unusually strong,

until he first ascertains whether there is not still left some susceptibility to vaccinia.

ART. VII.—*Notes of a Case of Enteromalacia.* By THOMAS ADDIS EMMET, M. D., Visiting Physician to the State Emigrant Hospital, Ward's Island.

AN infant, ten months of age, of a young and healthy German woman, was admitted to the hospital, March 3d, 1853, with pertussis, which ran its course without complication, and the child had so far convalesced during the past month as to have rapidly regained apparently its lost flesh and strength.

July 10th.—Dr. Irwin, the resident physician in charge, drew my attention to the child as being unusually fretful, and not having nursed well for several days previous. During the night a slight diarrhœa had set in, evacuations green in color and acid in character. I found the heat of skin greater than natural, gums red and swollen, with a constant dribbling of saliva; directed them to be scarified, and not to check the discharge from the bowels without it became necessary.

July 11th.—The resident physician, on cutting the gums, found the teeth not sufficiently advanced to be the cause of irritation. During my absence, the diarrhœa becoming too profuse, it was ordered about three grains of the nitrate of soda every two hours, with a warm bath and fomentations to the bowels, to relieve the increasing tympanitis. By these means the discharges became partially checked, while vomiting had supervened, similar in character with the discharges from the bowels. Found the pulse feeble and irregular, respiration hurried somewhat and jerking in character, temperature of the body increased, that of the extremities diminished, features more pinched and sardonic in expression, abdomen distended with flatus, pain evinced on pressure over the right iliac fossa, while the child attempted to protect itself with its hands; legs drawn up and flexed on the trunk, with

the knees turned inwards, urine sufficient in quantity and had been passed freely. Directed mustard drafts to be applied to the epigastrium, one-half grain hydrarg. ch. mitis, every two hours, until three or four doses had been administered, watching its effects, together with tinct. opii camph. to assist the nitrate of soda and overcome the insomnia, which throughout had been most distressing.

July 12th.—Emaciating rapidly, with the characteristic appearance of one dying of tabes, features sunken, dark areola around the eyes, cornea flattened and clouded from infiltration between its coats, heat of body less than yesterday, extremities cold and clammy, knees still flexed, abdomen not so much distended, but little pain or uneasiness evinced on pressure, while the child remains quiet, if not disturbed from its chosen position. The discharges from the bowels had been checked, but the vomiting continued from time to time. By artificial means, the natural temperature of the body had been partially restored, stimulants were used as freely as the circumstances of the case would admit; no effect produced by the anodyne. Remedies were now discontinued, as the patient was rapidly sinking; died during the forenoon, about seventy or seventy-five hours from the apparent commencement of the attack.

Post-mortem examination twelve hours after death.—The weather being remarkably cool for the season, no decomposition had set in. On opening the abdomen, the intestines were found blanched, and exhibited a peculiar waxen appearance. Found no evidence of peritonitis, strangulation, intussusception, or perforation of the intestines; but in attempting to remove the lower portion of the ilium, near the cœcum, rupture took place readily in several places, and the contents passed into the cavity of the abdomen. While washing the portions removed, they rapidly disorganized into a gelatinous pulp. On holding sections of the small intestines towards the light, it was found that the mucous and muscular coats had disappeared in patches, varying in size from a millet seed to that of a three-cent piece, leaving the serous one still in its

integrity. This state of things existed nearly throughout the ilium, with an enlargement of the solitary glands, having the appearance of miliary tubercles. The patches in the ascending colon (although somewhat larger) were confined exclusively to its lower third. The vessels between the omentum were empty, and could with difficulty be traced, while there existed an unusual enlargement of the mesenteric glands, hard and red in color. The other organs were healthy; brain not examined.

This disease, although described by writers as non-inflammatory in character, and owing to faulty nutrition, is rarely ever met with among the large number of emigrant children admitted to the hospital. This is the first case I have seen, among several thousands treated during my time of service in the institution as a resident and visiting physician.

ART. VIII.—*Case of Persistent Vomiting, arising from Intestinal Calculus; followed by Death.* By —— DUDLEY, M. D., of Brooklyn, L. I.

Tuesday, Sept. 13th, 7 A. M.—Was called to visit Captain P. W——, whom I found vomiting and complaining of severe pain in the region of the stomach. I learned this state of things had existed through the night, at short intervals. The contents of the stomach ejected were bilious matter, mixed with undigested fruit, which he had eaten the evening previous. The skin, moist and cool; tongue, slightly furred; pulse, 84, soft and full; respiration, thoracic and easy; passed urine freely; had a movement from bowels the morning previous; no tenderness on pressure over the abdomen. In order to relieve the more urgent symptoms, I prescribed pills composed of ½ gr. op. and 3 grs. calomel, to be repeated every two or three hours until relieved; also a mustard poultice over the region of the stomach. At 1 P. M. found the vomiting unabated and the pain increased since my visit in the morning, and at one time had become so severe, that,

having sent for me and not finding me at home, he called on Dr. Enos, who ordered same treatment, also administered an opiate injection. This treatment was continued during the remainder of the day and night following, increasing the opium to 1 gr. each dose. Ice, mint tea, toast-water, given at short intervals, to allay the thirst and vomiting. 9 o'clock P. M., visit.—No material change since last visit.

Wednesday, 7 A. M.—Learned from his friend, who sat up with him, that he had but little sleep; the vomiting continuing at intervals of half an hour to an hour, preceded by copious eructations of gas. I ordered him 10 grs. rhubarb in pills, alternated with a teaspoonful of Henry's magnesia, to be repeated every two hours, until an operation was produced, assisted by injections of soapsuds and castor oil. On visiting my patient at noon, found he had taken the medicine for three doses, but rejected them soon after; the longest time retained was half an hour. The vomiting not relieved. Ordered a blister to the pit of the stomach, which he refused to have applied, and became fretful and impatient. At 6 P. M., found that he had slept a little, but symptoms had not improved. 9 P. M.—Consultation with Drs. Pratt and Enos, when we agreed to put him under the decided effects of opiates; viz., 20 drops Magendie's solut. morph. in camphor, mixture, every two hours, alternated with injections of tinct. opi. 3 gr. in warm water, until sleep was produced. Twelve at night, left him under the effects of the anodyne.

Thursday, 7 A. M.—Soon after I left last night, he became restless, slept little, vomiting returned, but pain much mitigated; treatment same; ordered arrow-root, with brandy, in small quantities, but these he soon ejected. 10 A. M.—Consultation; after examining our patient, concluded on applying a blister to the stomach, and giving pills, of 10 grs. calomel and 1 gr. opi., every two hours, for three doses; also, injections of soapsuds in large and repeated quantities. 3 P. M.—More quiet, had little rest, vomiting not so frequent, continued same treatment. At 6 P. M., dressed blister and repeated injections. 10 P. M.—Vomiting increased, appear-

ance and smell presented, for the first time, a stercoratious character, which aroused our suspicion of obstruction existing somewhere. All his other symptoms bore a negative testimony to either concealed hernia or intussusception; the pulse continuing about 80 to 84, full and soft; skin, moist and warm, mind clear. I stayed with him all night, and succeeded in getting him under the influence of the opiates.

Friday, 10 A. M.—No great change in his general symptoms; said he felt more refreshed from the sleep the night before. Gave Seidlitz powder, which, although he did not retain long, said was particularly grateful to him. Same treatment, with some slight alteration in the opium, to be continued; and to increase the anodyne injections to three drachms, and dress the blister with morphine ointment. 2 P. M.—Had vomited during the day large quantities of fluid which he had taken, mixed with stercoratious matter; ordered soda draughts at intervals, brandy and water, gum-water alternated. Refused all other kind of nourishment. 6 P. M.—Agreed to give a draught composed of hydrocyanic acid, 1 drop; Magend. solut., morphia, fifteen drops; simple syrup, half an ounce; to be repeated every third hour till sleep was produced. 11 P. M.—Same treatment; as sleep was produced, the draught was omitted.

Saturday, 7 A. M.—The latter part of the night rather restless, vomiting returned, no pain or tenderness on pressure, injection administered of soapsuds and castor oil, no fæcal discharge. 10 A. M.—Symptoms much the same as yesterday; injections continued (through the long tube) every two hours, but without any satisfactory result. Drinks and nourishment the same. 6 P. M.—Consultation. Anodyne treatment, both by draughts and injection, repeated until sleep was produced; omitted hydrocyanic acid. 10 P. M.—Had some sleep; vomiting not so frequent; character the same. Anodyne draughts repeated. Sour drinks only desired.

Sunday, 7 A. M.—Passed a rather quiet night, until near morning, when he became restless, and the vomiting soon

returned, particularly on taking the slightest nourishment. No other perceptible change. 10 A. M.—Agreed to continue the anodyne treatment, and support him with such nourishment as he could retain. 2 P. M.—Slept a little during the day. Complains of no pain, pulse 84, soft and full, respiration normal, skin moist and warm, mind clear, expressed himself more comfortable, mind free, and looks healthy. 7 P. M.—No alteration since our last visit in the condition of his bowels. We gave croton oil in doses of two drops, assisted by copious injections every alternate two hours, for three doses; he vomited the first almost immediately, and the other in an hour and a half. Introduced O'Berne's tube, 20 inches, into the bowels, and passed up injections through it; but no fæcal matter returned. 12, Midnight.—No paliation of his symptoms; and the vomiting continuing at intervals of twenty to thirty minutes, convinced us that obstruction existed somewhere in the small intestines, from the character of the matter ejected, &c.; but the cause could not, by any evidence manifested, be either pointed out or satisfactorily explained; concluded, with the concurrence of his friend, to call in Dr. Williard Parker in consultation with us.

Monday, 10 A. M.—Consultation. After a careful examination and review of the case, we supposed the obstruction arose from spasmodic contraction of the muscular coat of the intestine, accompanied by a gouty diathesis. Agreed to continue the anodyne treatment with vini colchici. 2 P. M.—Symptoms and treatment same. 9 P. M.—Administered a large injection through O'Berne's tube, which returned no fæcal matter or smell; ordered anodyne injection given as before, and morphia draught repeated.

Tuesday, 10 A. M.—Consultation. Same treatment advised, no perceptible change in his symptoms. Dr. Fish, his family physician, having arrived from Savannah, joined our consultation this time; treatment explained and concurred in by him. 2 P. M.—Symptoms and treatment same. 9 P. M.—Gave a large injection, followed by an anodyne, the anodyne draught to be repeated at intervals of three hours, until sleep is produced.

Wednesday, 10 A. M.—Consultation. There being no abatement in his symptoms, we agreed to repeat the croton oil in same doses as before in draughts; but observing no good effect after two doses, it was omitted. 2 P. M.—Gave a large injection of arrow-root, which remained some time, part only coming away; nourishment in small quantities continued. 10 P. M.—Gave a large stimulating injection with castor-oil, salt, and turpentine, repeated twice; and afterward gave an anodyne injection.

Thursday, 10 A. M.—Passed a restless night, and appeared much worse in all respects; pulse much smaller and more frequent, skin cold, mind wandering. Gave brandy and water frequently, applied mustard, warm applications to feet. At 4 P. M. he expired.

Friday, 12 M.—*Autopsy twenty hours after death.* (Abdominal viscera only examined.) External appearance: slight tympanitis. State of the blood general. Internal, found all the organs rightly located; the peritoneum was completely injected, and fibrinous effusion in its cavity; the intestinal folds were agglutinated in many parts by recent adhesions. I removed the bowels from the cavity for more convenient examination, and commenced from above. At the lower part of the superior third of the jejunum, found a large perforation from ulceration, and several smaller ulcers along the middle third; in the lower portion of this part of the intestine found a large concretion, composed, from its appearance, of magnesia and charcoal firmly impacted. Here, no doubt, existed the obstruction and the cause of death. Dr. Fish, his physician, informed me he had been in the habit of using these articles freely and frequently for many years. Size, length, two inches; diameter, one and a quarter inch. Weight —.

Analysis of urine.—Sp. Gr. 1.022; reaction acid. *Color and odor* normal.

Microscopic examination gave no indication of organic or functional disease.

ART. IX.—*On Functional and Sympathetic Affections of the Heart.* (Read before the Society of Statistical Medicine.) By JOHN W. CORSON, M. D., late Physician to Brooklyn City Hospital. Physician to the N. Y. Dispensary.

IT has latterly become a fearful thing, after certain taps on the chest, and listening through a mysterious tube, to pronounce in the patient's hearing, "*Disease of the Heart.*" For reasons that will appear, we venture in preface a frank confession of delusions and difficulties. We can make almost any man's heart palpitate by simply saying it has something wrong. It is taken as a hint to make a will, or a soft professional whisper, "Thou shalt surely die!"

We can imagine how terrible must be the agony of suspense to the victim of real organic heart disease;—how he inwardly feels that some spring or valve about that treacherous heart is spoiled; and that, sooner or later, like a broken timepiece, it must stop;—how the spectre of death hovers with his lance, like the sword of Damocles over his head, or knocks loudly at his heart, at the desk, the pulpit, the bar, or the bedside;—scares the smile from his face at his own festive board;—or folds him in its arms as the demon of nightmare, and begets the horrible dream that the loved ones who so hopefully bade him adieu at night will find him a lifeless corpse in the morning. And all this cruel alarm may be equally caused by the sham imitation of trifling nervous or functional palpitation. The heart is often a perfect medical puzzle. It sympathizes, at times, so closely with its neighbors, the stomach, liver and lungs, as to perplex a careful physician as to which is most at fault. It has special telegraphic wires to the brain, and through the great sympathetic to the intestinal canal, the kidneys and organs of generation, and it shares in every disorder of these. It has mysterious knockings from reflex nervous influences, the wire-pullers of which are at distant points. Like a wind-harp, it trembles with every thrilling emotion, and is untuned alike by the strain of anger, fear, joy, or sorrow. It is over-excited or paralyzed by every malady which changes its own proper stimulant, the blood. And thus, from slight causes, it may torture its owner with the constant fear of physic and death.

The counterfeits, indeed, are as plenty as the real coin. Perhaps no man ever saw more of heart disease than the late Dr. Hope, and we have the deliberate testimony, in his work, that one half of the private cases were merely functional. We may sincerely endorse this statement, and add that these average the most mental suffering.

The public generally cannot distinguish between the mock imitation and the real. They know only of the fatal kind that startles the neighbors, and fills the newspapers with paragraphs of the sudden decease of jolly Falstaffs and blooming matrons, and the verdicts of coroners' juries of "death from disease of the heart." And, in these days, when sophomores and boarding-school misses take so to text-books of physiology, and "Medicine made easy" dwindles to a pocket edition—when the "sovereign people" flock, for mere amusement, to travelling lecturers with grim manikins, and learn just anatomy enough to frighten themselves for a shilling—it is hazardous, at the bedside, to mention the word "heart," or kindly try to explain, or mystify, in "words of learned length and thundering sound." While this kind of knowledge, when thorough, may be exceedingly useful to all sensible people, it is commonly just superficial enough to be imaginary death to the morbid and nervous. In physic, both to "him who gives, and him who takes," infinitesimal learning is positively a "dangerous thing." There is scarcely a gloomy dyspeptic who has not his health-book full of alarming woodcuts of brains, stomachs, lungs and hearts, and who does not wonder how he lives from day to day, with such a delicate gear. Like a certain hypochondriac, who once read a medical book, and fancied he had the symptoms of every disease in rotation, from apoplexy to itch, he has most vivid imaginings, and no organ suffers more than the heart. And this is not strange. Studying a subject will often make us morbid. Medical students, and dyspeptic physicians themselves, are frequent subjects of this heart-delusion, and quite as honestly frighten and victimize others. We have personally known thriving but sedentary mechanics, enterprising merchants, and master-spirits in the learned professions, incapacitated for years, and finally cured, and enabled to laugh at their sincere medical persecutors, by open-air exercise, a vacation, or a foreign tour. Worse than this, we have seen, within the last fifteen years, pale, hysterical females, for the involuntary compliment their unruly hearts have paid the ear of a learned and handsome physician, wrongly and ungallantly sentenced to digitalis and lacerating cups. These are no trifling mistakes. The treatment of *functional* heart disease, as we know, is generally the very opposite of that of organic. The patient needs active exercise perhaps, and we enjoin paralyzing quiet; he should forget his ailments in hopeful assurance, and we terrify; he wants generous beef and mutton, and we tantalize with low diet and vegetables; he requires bracing tonics, and we depress him with sedatives, and fancy we copy Hope and Bouillaud, in taking his impoverished blood.

Not that we undervalue the attainments of our noble profession. Hippocrates himself, in the first of his immortal aphorisms, has magnanimously confessed that "experience is fallacious and judgment difficult." If men's minds and bodies were all cast by the Creator in the same mould—if all were educated alike, and if human wisdom were perfect, then might we expect medical opinions to be uniform and infallible. Our only astonishment is, that the regular members of the great medical church universal, are, in the main, so correct and unanimous in their faith and practice. But, as Andral and Addison* have told us, perfection in the difficult science of physical diagnosis of chest disease is not so easy. The enthusiastic student, fresh from the beautiful theories of books, and with all its hard names ready on his tongue, is doomed to bitter disappointment, if he imagine that, without long and severe training, his uneducated senses can at the bedside accurately weigh and measure a living heart as it flutters in the bosom, or truly estimate its false alarms, its throbbings, and heavings, and its moanings, faint perchance as those of the sea-shell, that

> "Remembers its august abodes
> And murmurs as the ocean murmured there."

When we remember that, except a few obscure hints in Hippocrates and the older writers, this whole science has risen within the memory of a long-lived generation;—that Laennec himself fell into the blunder of attributing the second sound of the heart to the contraction of the auricles;—that after the sacrifice of so many donkeys and dogs to watch their bare and quivering hearts, the highest authorities are not quite agreed as to the causes of the first sound;—that Skoda, in his masterly work, gives no less than eight different theories, with their authors, to account for the impulse of the heart alone;—surely, it is not strange that disciples should be sometimes mistaken.

Confession, good people tell us, is the first step towards reformation. For ourselves, and our friends, we have tried faithfully to perform this ungracious duty. Mortification indeed, from mistaking our own as well as the cases of valued friends and patients, more than ten years since, first led to the series of observations embodied in this paper. We would fain atone for our early faults by the discovery of more light. Detained by the crowding thoughts long buried, we have lingered thus upon the threshold of the subject, to establish the following propositions:

---

* "On the Difficulties and Fallacies of Physical Diagnosis."—GUY'S HOSP. REP.

1st. That functional derangements of the heart often simulate fatal organic disease so closely as entirely to deceive, and cause great and needless suffering.

2nd. That, in cases of cardiac disease, it is therefore always best to defer giving an *unfavorable* opinion, till we have made repeated examinations after exercise and quiet, and until after the test of treatment.

3rd. That this subject is of great importance; is still somewhat obscure, and therefore demands further investigation.

To present a better picture, we shall mingle much that is old and familiar to all with the few things of our own that may be new, in a brief review of the whole subject. Our limits will oblige us to condense as much as possible, and to give but a mere abstract of the cases we may quote from others, or record of our own.

Definition. By functional affections of the heart, we mean its numerous derangements from nervous disturbance, alterations in the blood, or sympathy with neighboring organs, which give no *certain signs of organic change*, in its walls, cavities, or valves, while living, or after death.

Symptoms. As before intimated, many of the symptoms of organic heart disease have their close functional imitation. There may be violent palpitation, unnatural impulse, bellows murmur, intermittent pulse, præcordial pain, or fainting, with difficult breathing, or even swelling of the feet, and yet not the slightest organic lesion, or really dangerous disease of the heart exist; nothing but some sympathetic irritation or mere functional disorder, entirely curable. Let us dwell a moment on each of these.

Palpitation may be said to be the sensation of unusual or painful action of the heart. Though occurring also in organic, it is so prominent a feature of functional cardiac disturbance, that the whole subject has been grouped by some under the head of "Nervous Palpitation." In health we are scarcely conscious of the heart's movements.

The hard bounding of congestion of the heart, the smart throbbing of its irritation, or the fluttering and faltering of its debility, are all disagreeable to the patient, and are all grouped under this common term. In irritation of the heart, connected with dyspepsia, as Abercrombie has well described, the heart sometimes rolls and tumbles like an animal in a tight place, frightening the patient with the wildest antics. Alone, it is commonly a symptom of little danger, and attacks many with slight provocation; generally, it occurs in temporary paroxysms; occasionally, the fits are frequent and severe, disturbing sleep,

and leading the nervous patient to gloomy thoughts, like that of Longfellow's, of hearts that—

> "Still, like muffled drums, are beating
> Funeral marches to the grave."

Impulse. In health, and in the upright position, as we all know, with every pulsation, the point of the heart strikes against a circular spot, dull on percussion, a couple of inches broad, opposite the cartilage of the fifth left rib, reaching to the sixth, two inches below and one inch to the sternal side of the left nipple, and technically called the *præcordial region.* The extent, force, and manner of this *impulse*, as it is termed, are important points. The impulse in functional congestion, or irritation of the heart, sometimes jars the whole front of the chest, possibly beyond the left nipple, and below the sixth rib, so as to imitate organic enlargement; but then there is the absence of that infallible test, *extended dullness on percussion.* When the heart is loaded and stimulated by rich blood from sedentary, high living, or violent gymnastic exercise, the *impulse* is *strong* and *bounding;* in the palpitation of hysterical women or delicate nervous men, it is *smart* and *knocking;* and in the exhausted and enervated, it becomes *soft* or *hurried tapping.*

Intermittent pulse. The pulse, as Celsus long ago observed, is sometimes a "thing most fallacious." A matter apparently so important as complete intermission, often means little or nothing. From idiosyncracy it is habitual in some in perfect health. It is very frequent in cardiac irritation from derangement of the stomach. Dr. Billing speaks of it as common with old persons, whose hearts are "lazy" and require generous treatment. It commonly comes on in paroxysms, and may occur from the third to the tenth or twentieth beat of the pulse, or quite irregularly. Laennec has divided it into true or false, as it reaches the radical pulse, or affects the heart alone. While intermission is frequently found in structural lesions, we must admit the aphorism of Skoda, that "the greatest irregularity in its rythm does not warrant us in assuming the existence of organic disease of the heart!"*

Bellows murmur. The valvular murmur of functional derangement is a soft, blowing or whiffing sound, like a light jet of air from a dry syringe; rarely loud, and *never harsh* like organic murmurs;

---

* Abhandlung über Perkusson und Auskultation.

confined, as a rule, to the *aortic valves*, and the *first sound*; limited usually to a small space opposite the cartilage of the *second right rib*; occurring in paroxysms with excitement, and ceasing with rest; sometimes with whizzing in the carotids; and almost invariably accompanied by that fitful hum in the jugular veins, like the noise of a top, or distant spinning-wheel, which the French have named the *Bruit de Diable*. The bellows murmur is confined almost entirely to pale anemic subjects, with a *quick pulse*,* suffering from hemorrhage or chlorosis, and having the blood reduced, according to Andral, till it contains much less than the healthy standard of red globules. Laennec believed it sometimes occurred temporarily under excitement in nervous healthy persons. Magendie found that dogs bled largely, acquired a quick, irritable pulse, and a distinct bellows murmur.

Præcordial Pain. Except in the rare cases of angina pectoris which are not organic, and are attended with intense pain, that of ordinary functional affection is rather *uneasiness*, sense of *weight*, or external *soreness*, probably rheumatic or neuralgic; or, in dyspeptic cases it arises from the heart pulsating so near the sensitive stomach; and is then referred to the epigastrium.

Syncope. Fainting has been aptly termed by Bouillaud "momentary paralysis" of the heart.† It varies greatly; sometimes it occurs with merely sudden paleness, dimness of sight, soft thready pulse and sinking, with remaining consciousness, and the patient soon rallies; or he may lie the image of death, pale, cold at the extremities, pulseless at the wrist, apparently breathless, and with only the faintest first sound of the heart for hours or days. The recovery is accompanied by gasping, and sensations generally disagreeable, though in some rare instances they are said to be pleasant. Slight fainting is with nervous persons a very common symptom, and unattended with danger. It is especially characteristic of that form of functional derangement we shall term *debility of the heart*. Prolonged syncope in any cardiac affection is naturally alarming from its close imitation of death, and from the fact that organic disease often terminates in this way, never to rally. Persons also have doubtless been buried alive in this condition.

Dyspnœa. Difficult breathing, though a common symptom of organic difficulties of the heart, occurs in functional disease, principally in those forms of plethoric congestion we shall presently mention, from temporary imperfect arterialization of accumulated blood, or it takes

---

* Hughes.

† Maladies du Cœur.

place in the opposite state of anemia, in which, from pure debility, slight exertion will sometimes induce fainting and shortness of breath.

Œdema. Dropsical swelling of the feet and legs occasionally excites unnecessary apprehensions in pale chlorotic patients laboring under functional palpitation, with soft bellows murmur. But there are never those dropsical effusions of the chest or abdomen so common in organic disease. It is simply a little passive œdema from weakness, which soon disappears under tonic treatment.

Diagnosis. Functional cardiac affections are so apt to be mistaken for organic, that it seems well to enlarge on this point. Age and constitution, according to Dr. Calthrop Williams, throw some light on the subject. As a very general rule, liable to numerous exceptions, functional disturbance is found in sedentary young men, delicate or sanguine, and in chlorotic or hysterical females, from fifteen to twenty-five; while organic commonly occurs later in life, and in the robust as well as the feeble. The heart affections of childhood are almost invariably organic, and from rheumatism.

Functional symptoms are far the most *variable*, disappearing at times entirely, in sleep or quiet, or re-appearing capriciously in paroxysms during bodily rest, from mental excitement or flatulence, while organic impulse and murmurs are more constant, and easily roused by exertion. Walking rapidly a few times round the room, or up stairs, is a very useful test. It will often have no effect on functional symptoms, but it is sure to embarrass the circulation and breathing in organic disease.

Functional affections are commonly much benefited, or cured by treatment; either improve or remain *stationary a long time*,* while organic are too often only palliated by treatment, and tend gradually to grow worse.

In the slight œdema from chlorosis, we have the *general appearance* of the pale, waxen face, blanched lips, dark areola of the eye, and swelling confined to the *feet* and *legs;* while in the effusion of organic change, the face is bloated, dusky or purplish, the lips bluish, and the dropsy extends to the abdomen or thorax. The unremitting wear of organic disease often produces, as Corvisart has observed, a peculiar anxious contracted expression of countenance.

The *præcordial region* in functional affections is uniformly natural; while in organic enlargement, on close inspection, there can generally be detected more or less *bulging*.

The *purring tremor*, (*fremissement cataire*), a sensation to the hand

* Valleix.

like the purring of a cat, is felt only in organic disease, commonly of the mitral valve. According to Skoda, in mitral disease, too, the *second sound* of the heart is always accented and prolonged.

A wavy, jerking, collapsing *pulse*, unlike any other, is found in free regurgitation, or what the Germans term "*insufficiency*" of the aortic valves.

The sounds of the heart, in functional affections, are unchanged, or a trifle clearer; in organic hypertrophy, the first sound is duller, and in dilatation it is sharper, and like the second sound.*

To contrast them better, we have arranged a few of the more important tests in opposite columns in the following table, suggested in part by the contents of similar ones in the great work of Canstatt,† and the excellent paper by Dr. Hughes, on *Anæmic Murmurs and their Diagnosis* in *Guy's Hospital Reports.*

In Functional Heart Affections:	*In Organic Heart Disease:*
Præcordial dullness on percussion is not permanently *extended*, nor the *apex displaced.*	*Præcordial dullness* in enlargement is permanently *extended*, and the *apex crowded* to the *left.*
The *impulse* in *plethora* is strong *bounding;* in *irritation*, smart *knocking;* in both, widely jarring; in *debility*, small, soft *tapping*, sometimes *hurried.*	The *impulse* in *hypertrophy* is strong, broad *heaving;* in *dilatation*, weak, wide *flapping;* in both together, strong, large *bulging;* in all with *extended dullness.*
The whole *movement* of the heart is more *elastic, light*, or *easy.*	The whole *movement* of the heart is more *dead, clumsy*, or *labored.*
Functional murmurs are *soft blowing, aortic* and *systolic;* are from *anæmia*, and usually with the venous hum in the neck.	*Organic murmurs* are *harsher, louder*, often *grating, aortic* or *mitral, systolic* or *diastolic*, or both, and very rarely with *anæmia* or venous hum.
Functional is more *paroxysmal.*	Organic is more *uniform.*
Active exercise is often well borne, and benefits.	Active exercise always *aggravates.*
The *causes* are mainly *dyspepsia, anæmia, plethora, nervous* or *generative disease.*	The most common *causes* are, first, *rheumatism;* and next, Bright's disease.

* Hope. † Pathologie und Therapie.

Prognosis. The result, in functional cardiac difficulties, is almost always favorable. We can call to mind some instances of females with exhausting discharges, or prostrated by grief or despair, in whom functional debility of the heart has been finally succeeded by stretching of its walls and incurable dilatation.

Some have thus literally died of a broken heart. On this account, in cases of anæmia, or great weakness, it is desirable to lose no time in strengthening the debilitated organ.

Causes. A large majority of the cases of functional disturbance of the heart are connected directly or remotely with affections of the digestive or generative organs. Having to notice the principal causes individually in our future classification and description, we here give, with perhaps a little repetition and latitude, the following simple enumeration.

Sanguineous:—Plethora, revulsion from cold, pregnancy, pulmonary congestion, hemorrhoids; irritation or exhaustion from hemorrhage, chlorosis, excessive lactation, &c.

Muscular:—Rowing, gymnastics, running, dancing, or violent singing.

Nervous:—Neuralgia, spinal irritation, hysteria.

Mental:—Exciting, anger, or joy; depressing, fear, sorrow, despair; exhausting, excessive study.

Digestive:—Disordered stomach or liver, tape-worm, gout, diarrhœa.

Generative:—Uterine disease, menorrhagia, amenorrhea, dysmenorrhœa, leucorrhœa, excessive indulgence, masturbation, frequent nocturnal emissions, or spermatorrhœa.

Poisonous or irritative:—Tobacco, coffee, green tea, lead, marsh-miasma.

Pathology. One of three morbid conditions seems usually to predominate in functional cardiac derangement:

Congestion, Irritation or Debility. Irritation in other parts of the system often precedes congestion, as it does inflammation; but the heart is an hydraulic machine, and its congestions, especially of this kind, commonly depend upon causes independent of the organ; are at first sudden and mostly mechanical. Let the heart be overloaded for a time with rich, stimulating blood, and congestion may give rise to irritation; and when, at last, its nervous energy is exhausted, this again may terminate in the third stage, or *debility.* Or, again, two of these may be blended. For practical purposes, we think it will simplify our views to have a constant reference to one of these conditions, and

we have therefore made them the basis of what we trust is a simple and natural arrangement of the whole subject.

Classification. In introducing new terms, and what may be deemed innovations, we may be indulged perhaps in a word of explanation. Our object has been to *display best* what seemed *most important.* To do this, much depends on the arrangement. We learn far more of the family relations and practical uses of plants, for instance, from what is termed the "natural system," than the more showy one of Linnæus. So in the treatment of disease, the "natural order" is often first to regard effects; and, secondly, their causes. Suppose, for example, twenty persons fall sick from exposure to intense cold, and five get rheumatism, and five peritonitis, and five pleurisy, and the last five are frost-bitten, would any sane man treat all alike, because all arose from the same cause? We would treat its pathological *effects.* So, in different constitutions, mental excitement, as we shall see, may cause either cardiac *congestion, irritation,* or *debility;* or other agents may produce these same conditions; and all we propose to do, is to make these last *primary,* and their causes *secondary.*

Some may object, again, to our including affections mainly located in other organs; and, though their most troublesome manifestations are through the heart, may regard these as mere *symptoms.* Such would banish "*dropsy*" from every text-book, for this is commonly a mere "*symptom*" of disease of the kidney, heart, or peritoneum. We prefer to look at diseases and symptoms in every possible combination and light. Classification is only a convenient framework to display the picture, to be shifted or amended as occasion may require.

CLASSIFICATION.

I.

Congestion of the heart.
- Plethoric,
- Over-active,
- Revulsive,
- Emotional.

II.

Irritation of the heart.
- Nervous,
- Hysterical,
- Mental,
- Anæmic,
- Dyspeptic,
- Uterine,
- Spermatorrhœal.

III.

Debility of the heart.
- Nervous,
- Hysterical,
- Emotional,
- Anæmic,
- Dyspeptic,
- Uterine,
- Spermatorrhœal.

I. CONGESTION OF THE HEART. This is characterized by a strong, *bounding impulse*, unnaturally jarring the chest, without the extended *dullness* of organic enlargement, and frequently without corresponding force in the *pulse* at the wrist, with præcordial *oppression* or pain, and irregular *palpitation*.

Cardiac Congestion from Plethora. This form usually occurs in adults of full sedentary habits, or sanguine growing youths. Dr. Latham has given a graphic description of it under the name of "Mock Hypertrophy." "I am well aware," says Dr. L., "that there is a mock hypertrophy of the heart, bearing so close a resemblance to the true, that I should find no fault with you for being taken in by the counterfeit. There may be violent impulse of the heart felt not only in the præcordial region, but in every part of the chest upon which you lay your hand. Here may be pain in the heart, and pain and throbbing in the head; and all these may be never absent, and often aggravated, from time to time, by accidental circumstances; and they may continue, from first to last, for several months, or for several years, and produce in the meanwhile an incapacity for all useful exertion, both mental and bodily. All these may be, and yet there be no hypertrophy.

"When the impulse of the heart is excessive, and, at the same time, the sounds are obtuse, muffled, and indistinct, and the præcordial region presents a larger space than natural, which is dull to percussion, then the signs of hypertrophy are complete. But when the impulse of the heart is in excess, and, at the same time, its sounds are as loud and clear as ever, or louder and clearer still, and the whole præcordial region is quite resonant to percussion, save the small space naturally dull, then the signs of hypertrophy are incomplete."

Contrary to some others, Dr. L. believes the cure of real organic hypertrophy hopeless; while he has "treated successfully" the mock imitation described, "in a hundred instances."

This form is occasionally found among clerks and merchants of full habits, or sanguine youths from the country, who surfeit themselves with rich food, and take little exercise; thus overloading the stomach and stimulating the heart with rich blood, they sometimes complain of flatulence, indigestion, and pain in the head, as well as alarming palpitation.

Cardiac Congestion—Plethora—Recovery. A clerk, strong, athletic, married, and sedentary, consulted me a few months since for uneasiness, irregular palpitation, and strong, bounding, jarring impulse of a heart otherwise natural, attended with occasional indigestion and

constipation, and constant fullness and pain in the head, *with a bright congested eye.* He was ordered a free purgative of compound extract colocynth with blue mass, to eat meat but sparingly but once a day, to rise early, and use cold sponging with hard frictions, and, avoiding the heat, to walk several miles daily. These measures having only afforded temporary relief, on a return of symptoms nearly apoplectic, they were further aided by a full bleeding from the arm, and a powerful hydragogue cathartic; and by the most careful attention to spare diet and free exercise, in a few weeks he quite recovered.

Congestion of the heart from over-exertion. As we know, from their interlacing with the bloodvessels, the muscles in strong exertion must greatly increase the force of the circulation. Some ingenious explanations of this are given by Dr. Wardrop, the best writer we have seen on the subject of cardiac congestion, under the head of what he terms the *musculo-cardiac function.* Simply running a few yards, or any strong effort, in health, will, as we know, bring on palpitation. And in the affection in question, from the frequency or violence of the exertion, this overaction of the heart becomes habitual. The symptoms are much the same as in plethora. Sanguine growing youths, fond of gymnastics, and especially rowing, are the most frequent subjects.

Dr. Addison, in his lectures at Guy's, is in the habit of cautioning the students against the rowing matches on the Thames. A fine lad of seventeen, excessively fond of rowing, was brought to me while stopping with a friend on the shores of a lake, with suspected organic disease, having a violent, knocking impulse. He was duly freed from the imputation, and directed to be less ambitious in boating and climbing the neighboring mountains. Indeed, youths generally outgrow this development, if left alone. Occasionally, it ceases suddenly. Dr. Latham mentions a young officer whose heart ceased to be unruly at the battle of Navarino. Almost any kind of severe exercise may be the first exciting cause. A servant-maid, from carrying coals up stairs, a chorus singer in St. Paul's, and a French danseuse, were severally more or less disabled for a length of time by severe palpitation, from violent efforts in their different vocations.

Case.—A jeweller, aged twenty, short, stout, ruddy, and temperate, having practiced gymnastics, and particularly climbing, and suspending himself by the arms, consulted me a few months since for strong, jarring impulse, distressing fits of palpitation, and constant headache. He was ordered a free alterative purgative, to be followed by twenty drops of equal parts of the tincture of digitalis and hyoscyamus in water, three times a day, with the local application of croton oil, followed by bella-

donna; to eat sparingly of meat at dinner alone, to avoid violent exercise, and to walk much, moderately. He soon recovered.

A corpulent, healthy engraver, having run violently to overtake a coach, brought on severe palpitation of the heart, exhaustion, and difficult breathing, which remained for several days, and "were not relieved, until after blood-letting, leeches, and antimonials had been employed."*

Congestion of the heart from revulsion.—Any local agency which disturbs the equilibrium, and causes special determination of blood, may be termed *revulsive.* A moment's reflection on the number and size of the superficial veins, and the quantity of the blood they naturally contain, will show us the importance of the circulation on the surface of the body. Thus we aid this and relieve internal organs by sinapisms, pediluvia and diaphoretics.

Cold, by an opposite action, drives the blood from the surface, and overloads the internal organs. In a large hospital of this city, it is stated they can tell a very cold day in winter by the extra number of cases of apoplexy. On the principle of relieving this internal congestion, Dr. MacIntosh bled during the chill of ague. So, too, we forbid sudden cold baths to patients liable to apoplexy or disease of the heart. They have sometimes produced immediate death, or troublesome palpitation.

A gouty gentleman, after sea-bathing, had pain, palpitation, and *violent impulse of the heart, with small pulse*, for months, which were at last completely relieved by antimonials.

Cold substances taken into the stomach may derange the circulation. A case is quoted of a strong, healthy young man, heated with mowing, who drank freely of cold water, and was suddenly prostrated, with difficult breathing, loss of vision, and cold extremities, while, for the next three days, notwithstanding the attempt to relieve congestion by small bleedings, warm baths, and saline purgatives, there were *over-action, and intermission of the heart*, with an oppressed *pulse*, ranging *from* 14 *to* 50 *beats per minute.*—He slowly improved for the next four days, and at the end of the week the natural circulation was restored.†

Hot food, rapidly swallowed, has produced like effects. A young man, after eating a very hot potatoe, became insensible, finally rallied,

---

* Wardrop. † Am. Med. Repository.

and for nine years after suffered from pain, palpitation and *forcible impulse of the heart, with a weak pulse*, frequent epistaxis, and cold extremities. He was at length greatly relieved by several moderate leechings over the heart, with small doses of the tartrate of antimony, followed by preparations of iron.*

Revulsion may be occasioned by *mechanical pressure.* Thus, the French conscripts are said to produce a very good imitation of disease of the heart, by tying a ligature tightly round the neck or arms. Mr. Hyslop found, that by grasping firmly the two arms, he greatly assisted the recovery of a lady from fainting; and, on making the experiment of ligatures upon his own arms, he could increase the pulsations of the heart ten beats in a minute.

Pregnancy, by pressure on the abdominal vessels, as well as by plethora, sometimes occasions distressing palpitation. A young married lady, in the fifth month of her first pregnancy, was attacked with a violent beating of the heart, and an aortic thrill, supposed to be aneurismal. After great suffering and dropsical symptoms, unrelieved by bleeding, digitalis and other remedies, she recovered completely after natural labor.†

Suppression of habitual discharges, such as hemorrhoids or the menstrual flow, will sometimes by revulsion produce palpitation and congestion of the heart. A stout, ruddy country girl, with suppressed menses, who had "tumultuous palpitation," with the impulse so strong as to "raise the head," was restored to health by general bleeding, followed by purgatives, low diet, and cupping over the loins.‡

Pulmonary congestion may react upon the heart. The lungs, as we know, act partly like an immense sponge, filling the thorax, both in receiving and returning the blood. *Inspiration*, by expansion, draws in *venous blood*, while *expiration* by pressure expels *arterial.* Thus the mechanical effect of artificial respiration is to unload the heart of the stillborn infant; and, in this way, Sir B. Brodie roused the congested hearts of animals paralyzed by poison. John Hunter, it is said, once saved his own life, in nearly fatal syncope, from organic disease, by continual violent expiratory efforts. Some interesting facts on this subject may be found in the excellent works of Dr. Wardrop and Dr. Calthrop Williams. Congestion of the lungs has a tendency to overload the heart, and so palpitation and violent impulse are often accompanied by cough and difficult breathing.

---

* Wardrop. † Dr. Robert Lee. ‡ Dr. Calthrop Williams.

A lady, aged 28, kept awake, and sitting up in bed several nights, with a severe cough, could hear as well as feel the violent palpitation and impulse of the heart, especially on the slightest exertion. By small leechings to the chest, repeated every four days, and a dose of James' powder every night, all the symptoms were subdued.*

Emotional congestion of the heart. Every one has felt his own heart beat violently from mental emotion. Corvisart believed that affections of the heart in his time greatly increased during the reign of terror, and the exciting periods of the French Revolution. The term "broken-hearted," is unfortunately not merely figurative. From the paleness of the face, in terror or despair, we know that the blood has retreated *somewhere.* Shakspeare, the great naturalist of poets, tells us *where:*

> "Oft have I seen a timely parted ghost
> Of ashy semblance, meagre, pale, and bloodless,—
> *Being all descended to the laboring heart.*"

There is, however, more than mere revulsion. The heart receives besides a nervous *stimulus or shock.* This kind of congestion forms, then, a separate item, and an appropriate link to the next group of functional heart affections, or those depending on *irritation.*

A mother, still broken-hearted at the sudden loss of her child, a year previous, complained of difficult breathing, and a *violent impulse of the heart with a small pulse.* By means of alternate leechings to the chest and feet, with antimonials and sedatives, she at length completely recovered.*

II. Irritation of the Heart. Cardiac irritation is characterized by a smart knocking *impulse*, less *forcible* and *jarring* than that of congestion, but above that of health; more *variable* with excitement, and corresponding more uniformly with the radial *pulse.*

It arises principally from nervous derangement, impoverished blood, or morbid sympathy, with disorders of the digestive or generative systems.

Nervous Irritation of the Heart.—Some persons, from birth, have a nervous system unduly developed, and, in infancy are specially liable to convulsions; in childhood, to chorea; and in adult life, to hysteria or nervous palpitation of the heart. Some interesting observations on

---

* Dr. Wardrop.

this subject will be found in a paper by M. Gintrac, on *Surexcitation Nerveuse.**

The Irritable Heart.—Sometimes this exaltation of nervous sensibility is confined to a single organ, in the form of those curious obstinate affections described by Sir A. Cooper, Dr. Gooch, and others, under the name, "Irritable Breast," "Uterus, Testis," &c.

In the following example no neighboring sources of irritation could be detected. The morbid nervous excitability was exceedingly intractable, and confined to the heart alone, producing painful palpitation and a smart *rapping impulse*, and we venture from analogy to apply the above term.

Irritable Heart.—Incurable.—A female hat-presser, aged 35, unmarried, tall, muscular, otherwise apparently healthy, though suffering from occasional want and poverty, in a damp basement,—consulted me in 1848 for "nervous palpitation" of ten years' duration, and for which she bore the marks of counter-irritation, while under ineffectual treatment some years previous in Edinburgh. The heart was natural in size and sounds, with a little præcordial tenderness to the finger, *painful palpitation*, more or less constant, increased by excitement, and accompanied by a *smart knocking impulse.* Under the use of preparations of iron, Fowler's solution, in combination, or otherwise, with vegetable tonics, digitalis, hyoscyamus, conium, valerian, with mild counter-irritation, followed by the external application of belladonna, she continued for two years with slight palliation at times, but no permanent improvement, till at last she grew discouraged and discontinued treatment. A year or so after, she died somewhat suddenly of pneumonia, without affording the desirable opportunity of a post-mortem.

Spinal Irritation.—We sincerely endorse the opinion of Professor Romberg, of Berlin, in his great work on nervous diseases, that this matter has been vastly over-estimated. Most nervous or hysterical patients, and especially those subject to palpitation, have a little sensitiveness, on pressing over the spine of some of the dorsal vertebræ between the shoulders, which some have thus magnified with an alarming name. It is ordinarily, we think, simply a slight test of an irritable nervous system. When much affected by atmospheric changes, as Dr. Wood, of Philadelphia, has observed, it may sometimes be rheumatic. For a more serious view of the matter, we refer to the works of Teale and others. In some instances, where perhaps, from scrofu-

* Mem. de l'Academie Royale.

lous irritation or some injury, the spinal tenderness has been more deep-seated and constant, palpitation and other unpleasant symptoms have certainly been relieved by leeching, cupping, or irritation near the spine. Dr. Swett, in his excellent work, mentions a case of functional disturbance of the heart, cured by an issue near a tender vertebra, followed by tonics.

Irritating Nervines or *Narcotics* in common use, as articles of luxury, have the effect, in certain habits, of deranging the action of the heart; such are green tea and strong coffee. A case is mentioned of a gentleman, who could, at any time, by taking a cup of coffee, produce palpitation and bleeding from the nose. By far the most noxious luxury to the dyspeptic, or nervous, is tobacco. The essential oil is said to poison by paralyzing the heart. A Mexican minister, some years since, summoned Dr. Alexander H. Stevens, of this city, to Washington, for supposed organic disease of the heart. A cure was performed by emptying his excellency's snuff box. We shall illustrate further in a moment.

Neuralgia of the Heart.—Such has been the term given by some to the very rare cases of angina pectoris, which the researches of modern pathology do not show to be connected with ossification or other form of organic change.*

Irritation of the Heart, Angina Pectoris, from the use of Tobacco.—A highly intelligent friend, aged sixty-five, stout, ruddy, early married, temperate, managing actively his large business, after premising that he commenced chewing tobacco at seventeen, swallowing the juice, as is sometimes customary, "to prevent injuring his lungs from constant spitting,"—and that years after he suffered from a knawing, capricious appetite, nausea, vomiting of meals, emaciation, nervousness, and *palpitation of the heart*, dictated to me quietly at his desk, recently, the following story:

"Seven years thus miserably passed, when, one day after dinner, I was suddenly seized with intense pain in the chest, gasping for breath, and a sensation as if *a crowbar were pressed tightly from the right breast to the left, till it came and twisted in a knot round the heart, which now stopped deathly still for a minute, and then leaped like a dozen frogs.* After two hours of death-like suffering, the attack ceased, and I found that ever after my heart *missed every fourth beat.* My physician said that I had organic disease of the heart—must die suddenly—and need only take a little brandy for the painful paroxysms,

* See Dr. Walshe.

and I soon found it the only thing that gave them any relief. For the next twenty-seven years I continued to suffer milder attacks like the above, lasting from one to several minutes, sometimes as often as two or three times a day or night; and to be sickly-looking, thin, and pale as a ghost. Simply from revolting at the idea of being a slave to *one vile habit alone*, and without dreaming of the suffering it had cost me, after *thirty-three years' use*, I one day threw away tobacco forever. Words cannot describe my suffering and desire for a time. I was reminded of the Indian, who, next to all the rum in the world, wanted all the tobacco. But my firm will conquered. In a month my paroxysms nearly ceased, and soon after left entirely. I was directly a new man, and grew stout and hale, as you see. With the exception of a little asthmatic breathing, in close rooms and the like, for nearly twenty years since I have enjoyed excellent health."

On making, by his kind permission, a cursory examination, I found the heart seemingly healthy in size and structure, only *irregular*, intermitting still at every fourth pulsation.

Hysterical Irritation of the Heart.—It is well known that hysteria often imitates, successfully, dangerous inflammations and other ills, and among the rest, disease of the heart.

Hysterical Palpitation—Leucorrhœa—Recovery.—A widow lady, aged twenty-five, sanguine, nervous, sedentary, and very literary, after a series of hysterical paroxysms from sudden shock, requested my attention in 1850 to "disease of the heart," under which, she stated, medical and other friends thought her laboring for months previous. The least excitement would give rise to distressing palpitation, accompanied by a *smart knocking impulse.* There was some *leucorrhœa*, with pain in the loins.

Under the use of various preparations of iron, with bitter tonics and sedatives; belladonna to the præcordial region; a mixture of the tinctures of valerian and hyoscyamus for the fits of palpitation; with morning vaginal injections, of eight grains each, of extract of conium and tannic acid, in a tumbler of water, followed by evening injections with cold water, and regular long walks in the cool part of the day, in a few weeks she was quite restored to health.

Mental Irritation of the Heart.—This is exemplified in the tendency of all nations, figuratively or otherwise, to speak of the heart as the seat of the passions. Laughing, joy or anger accelerates, while grief or fear retards the circulation. The long, deep inspirations of yawning, sighing, and sobbing are instinctive, and mechanically relieve a congested or "heavy" heart. Doubtless from the mental shock af-

fecting the heart, the winner of a rich prize in a lottery, a feeble Emperor of Morocco in gaining a desperate victory, and a fond Russian mother in the restoration of her captive son, all died of the joyful news. John Hunter expired of disease of the heart in a fit of anger. The wife of a farmer, long harrassed with the fear of incendiaries; a nurse, from continued anxious watching; and a lady, tortured for a week with danger of shipwreck; each suffered afterwards from protracted disorder of the heart! A patient of the writer, disconsolate at the loss of her broken-hearted daughter, whose case will be mentioned, died of dilatation of the heart a few months afterwards.

Exhausting Mental Application is the frequent cause of irritation and palpitation of the heart. A friend, distinguished as a divine and author, aged about 42, moderately full, after several years' severe application, in which he habitually studied till three or four o'clock in the morning, was at last greatly incapacitated for a long period by irritable palpitation of the heart. He was most relieved by a succession of blisters, the size of a twenty-five cent piece, over the heart, and rest, with tonics, and at length nearly restored by a tour in Europe, mental relaxation and more generous diet. Any great mental effort, however, still exhausts his stock of nervous energy, and brings on irritability of the heart.

A celebrated Methodist clergyman, of middle age,—as a Western medical friend recently informed me, having,—by protracted and severe studies, brought on irregularity of the heart, was sentenced to suspension, and patient waiting for sudden death from organic disease, by the most celebrated medical professors of a Western school. In his retirement, he was surprised by the opinion of a shrewd country physician, that it was merely functional, and that he might with proper treatment gradually resume active labor; and finding, by a little experience, the last opinion correct, in a few months after he accepted the highest office in his church. He has since labored several years as Bishop.

It would seem as if the study of certain diseases sometimes favored their real or imaginary development. Laennec died of pthisis, and Corvisart of disease of the heart. When the celebrated Professor Frank was preparing his lectures on disease of the heart at Pavia, his own heart became so disturbed that he was obliged to rest for a time.* Rumor says that no less than five of the Professors in one of the medical colleges of this city have unjustly suspected their hearts.

---

* Romberg.

Medical students exhausted by a winter session are apt to be special subjects of real or fancied irregularity of the heart. We have frequently to assure our young studious friends that their hearts are certainly in the right place, and gravely prescribe a vacation. Bouillaud slyly alludes to this as a distinct species, under the name of "*Maladie du Cœur des Etudiants.*"

We remember an early friend who, with the writer and two or three other students, gravely flourished the stethoscope over each other as a sort of society of mutual observation. We fancy we see still the doleful expression of his pale, handsome face, at the spring of the gushing cups over his intermitting rebellious heart. He soon after grew stout and forgot his heart in a successful country practice. A young friend, attending our Lectures on Diseases of the Chest last winter, felt an unusual knocking of his heart after ascending the long college stairs, and required several examinations to satisfy him. An early fellow-student (who happened to come to light again after illness and a hard session), in mounting to one of the "sky apartments" of a Parisian hotel, used frequently in alarm to call the writer to examine his palpitating irritable heart, and recovered under the somewhat selfish prescription of a partially pedestrian tour with his adviser to the south.

Anemic Irritation of the Heart. The reaction from sudden hemorrhage or excessive venesection, so well described by Marshall Hall, is sometimes characterized by *palpitation, distress, a smart knocking impulse of the heart* and bellows murmur, with a quick jerking and occasionally intermittent pulse, thrill of the arteries, nervous panting and sense of wildness and pain in the head.

In the case of a middle-aged sanguine, nervous lady, under our care in 1849, who had been very largely bled in severe puerperal peritonitis, this mingling of heart and head symptoms suddenly assumed a very perplexing character; and with serious misgivings, as to whether the lancet was not farther required, she was fortunately partially narcotized with opiates, and the palpitation and distress at the heart soon ceased.

A boarding mistress is mentioned by Morgani, who, for "palpitation of the heart," was bled, with temporary relief, followed by great aggravation. The "breast seemed at every stroke to be lifted up," and the venesections were repeated, till by degrees she was, as the event proved, literally bled to death; for, on the post-mortem examination, not the slightest change in the heart or viscera could be detected. "Everything was entire, sound and natural."

In Chlorosis, especially in the more excitable of its delicate sub-

jects, or in the earlier stages, with the blanched skin and dark areola of the eye, we have sometimes the irregular action, smart knocking impulse and bellows murmur of an irritable heart. Palpitation, indeed, was enumerated as one of the symptoms of "the green sickness" by Sydenham.

Moderate Chlorosis—Palpitation—Tedious Recovery.—A lady, aged 25; moderately full, but pale as a statue, with blanched lips, dark areola of the eye, very sedentary, in deep domestic affliction, with scanty menstruation, consulted me in 1849, in much alarm, for distressing palpitation, and a smart knocking impulse of the heart, diminished by rest, and increased by excitement, with an intermittent neuralgic pain along the right of the sternum, and *without bellows murmur.* After the persevering use of various preparations of iron, with vegetable bitters, mild sedatives, and the local application of belladonna, with regular walking and generous diet for several months, she slowly recovered her health.

Dyspeptic Irritation of the Heart.—This exceedingly common form doubtless depends on what is termed *sympathy*, and this latter again is certainly somewhat mysterious. Something is explained by Marshall Hall's theory of reflex, nervous communication, as well as by considering the connection of the great sympathetic system of nerves. The facts are quite evident. An inflamed kidney, a pregnant uterus, or a concussed brain, will produce a sick stomach, and none of these can suffer but the heart and its pulse respond.

Dyspeptic Irritation of the Heart—Recovery.—A gardener, aged 50, muscular, unemployed, and melancholy, was admitted under our care at the New-York Dispensary, in August last, with loss of appetite, flatulence, bitter taste, tongue clean and red at the tip, tenderness of the epigastrium, constipation, high-colored urine, pulse 65 and soft, with *palpitation* and a *smart knocking impulse* of a heart otherwise natural. He was ordered a mild alterative purgative, to be followed by five drops of the tincture of nux vomica, in water, three times a day; to avoid indigestible food, coffee and tobacco; to sponge with cold water in the morning, and follow with friction; to walk five miles daily; and in less than a month he was discharged cured.

Congestion or Torpor of the Liver is frequently intimately associated with dyspeptic irritation of the heart. Dr. Hope gives a very interesting case of a lady aged forty, stout, with intermission, palpitation and oppression of a heart otherwise natural, and with constipation, succeeded by bilious stools and *enlarged liver.* Spare diet, and "active mercurial purgatives, employed almost without intermission

for two months, brought off an incredible quantity of dark green and deep orange bile." Suspension of these aggravated the symptoms. In three months she enjoyed "perfect health."

Hepatic Torpor—Indigestion—Severe Palpitation—Improvement.—A merchant, aged 55, spare, having suffered from dyspepsia, and the *fear* of organic heart disease for many years, consulted me in 1850, for superficial pain, palpitation and a smart knocking impulse of the heart, otherwise normal, with loss of appetite, flatulence, despondency, constipation, clayey stools, bilious urine, shooting shoulder pains, jaundiced dry skin, with occasional turns of night mare, and terrible headache. With an occasional mild mercurial purgative,—five grains each of the iodide of potassium, with the extract of taraxacum, in solution, three times a day,—followed by iron, with mild sedatives; small doses of the tincture of nux vomica; the use of equal parts of soap liniment and tincture of belladonna over the heart; careful diet, brown bread, and especially *recreation in the country, and gardening*,—in a few months he materially improved.

Tape-worm has sometimes produced dyspepsia with serious disturbance of the heart. Dr. Calthrop Williams mentions the case of a lady, aged twenty-two, with voracious appetite, fixed *pain in the left hypochondrium*, restless nights, febrile attacks, syncope, alarming cerebral symptoms, with *violent palpitation*, especially before eating—who, by turpentine and other purgatives (producing the voidance of a tape-worm), and a subsequent tonic course, was perfectly cured.

Gout is, among our active population, comparatively a rare disease, and among the very few cases we have known, we have not happened to meet any decided instances of functional disturbance of the heart. In older and more luxurious states of society, the case is different. Three of the examples of dyspeptic palpitation mentioned by Abercombie were evidently gouty. One gentleman, aged forty-eight, after suffering greatly from indigestion, and daily paroxysms of distressing palpitation, was at last cured as by a charm, by so small a quantity as twenty drops of the wine of colchicum, in divided doses, daily for a month.

Uterine Irritation of the Heart.—Such a phrase may possibly seem at first inconsistent, and excite a smile; but if that smile make the morbid sympathy between the uterus and the heart remembered, our purpose in coining the term is accomplished. Dr. Williams uses the short, expressive phrase "uterine palpitation." Every variety of menstrual irregularity, as well as structural disease of the uterus itself,

may occasion functional disorder of the heart. Want of space must limit our examples.

Uterine Disease—Palpitation—Recovery.—A lady, aged 26, having four months previously suffered much in an instrumental first labor, called my attention, in 1850, to palpitation, uneasiness, and a smart, knocking impulse of a heart otherwise healthy, accompanied by dragging pains about the loins. On examination with the speculum, the vagina was slightly smeared with leucorrhœal discharge, and the os uteri was prolapsed, swollen, tender, and excoriated. Under the use of occasional applications, with a camel's-hair brush, of a solution of the nitrate of silver of 90 grains to the ounce; vaginal injections of a solution of extract of conium and tannin, alternated with cold water; twenty drops of a mixture of equal parts of the muriated tincture of iron and the tincture of hyoscyamus three times a day in a wineglass of sweetened water, porter and beefsteak, she gradually recovered her health.

Dysmenorrhœa—Nervous Palpitation—Recovery.—A lady, aged 24, slender, stooped, strumous, having the remains of former spinal irritation, and having just weaned her firstborn, consulted me in 1843 for smart nervous palpitation and difficult, painful menstruation, declared to be "like labor." By full doses of Dover's powder and camphor in pills for the monthly paroxysms, followed in the intervals by the daily administration of the tincture of guiac, after the plan of Dr. Dewees; and subsequently, the still more successful use of a solution of the iodide of iron, in combination with the tincture of hyoscyamus; she regained her usual rather feeble health, and soon after became pregnant.

Irritation of the Heart from Spermatorrhœa in the male is sometimes present. We remember two cases of this kind. One was a young man, kindly referred by a medical friend to one of our Chest Cliniques, in which there was a smart, knocking impulse of the heart; but he unfortunately escaped us both, and did not return. Most commonly, however, it produces *cardiac debility.*

III. DEBILITY OF THE HEART.—This is characterized by a *soft, tapping impulse, sometimes hurried;* and a *tendency to fainting.* It is produced by any agency which, by general depression of the nervous system, changes in the blood, by depraved nutrition, weakening discharges, or the morbid sympathy with other organs, exhausts the nervous energy of the heart. We were strongly inclined at first, therefore, to adopt the term *enervation of the heart,* instead of the more familiar one we have chosen.

Cardiac Debility from Nervous Disorder.—Romberg has classed nervous diseases with a loss of power under the general term Anæsthesia. On this principle, certain poisons, as marsh miasma, lead, and tobacco, may be termed slow anæsthetics.

Enervation of the Heart from Marsh Miasma—Anxiety—Improvement.—A bricklayer, aged 28, tall, slender, bilious-looking, having previously suffered from ague in a miasmatic district, consulted us in 1844 for *palpitation, with feeble tapping impulse* of the heart, else normal, accompanied by a *tendency to faint*, even with the slight exertion of raising a brick; with rather feeble pulse and moderate appetite; spleen and liver natural in size; some spinal sensitiveness between the shoulders; and much *mental suffering*, from constant harassing of committees from an incredulous beneficiary society. He was ordered preparations of iron, with quinine, aloes, and bitters; mild counter-irritation and belladonna; cold sponging and friction; with diligent walking and total abstinence from cigars; and in a few weeks materially improved, but, against my friendly protest, was soon cut off by his society, and sent to his friends in the country.

Debility of the Heart from Lead-poisoning—Recovery.—A laborer, aged 34, muscular, having worked in a white-lead manufactory a few weeks, was admitted under our care in the New-York Dispensary, early in October last, for palpitation, difficult breathing, uneasiness and *faintness* on exertion, with *soft tapping impulse of the heart*, otherwise normal, with the *violet lead streak* of the gums, trembling weakness and numbness of the limbs, pulse 74, *weak;* loss of appetite, nausea, tenderness of the epigastrium, and constipation. He never had rheumatism; used no tobacco; indulged in no excess. Partially on the plan of M. Melsens in lead disease, he was ordered ten grains of the iodide of potassium in solution, with a few drops of the tincture of nux vomica three times a day; and subsequently these were aided by a blister, the size of a cent over the heart, dressed with belladonna ointment, with the effect of gradually relieving all the symptoms, and he left convalescent at the end of a month.

Weak Heart from Tobacco.—A cork-cutter aged 21 was recently admitted under our care in the N. Y. Dispensary, with faintness on exertion, palpitation and soft tapping impulse of the heart, from the excessive use of tobacco, who was cured by abstinence, walking, and the use of small doses of tincture of nux vomica, and latterly of the *acetated solution of strychnia.*

Hysterical Debility of the Heart.—Those instances of nervous females in which there is catalepsy, or fainting for hours, with a scarcely

perceptible action of the heart, are really cases of simply hysterical debility of the heart.

We suspect too that the favorite subjects for so-named "mesmeric experiments" have a weakness in that quarter.

Emotional Debility of the Heart.—It is scarcely necessary to add to our remarks upon the influence of depressing passions. The following cases explain themselves:

Weakness of the Heart—Domestic Grief—Much Improvement.—A poor women, aged 32, slender, mother of two children, fretting from want, and the long absence of her husband, was admitted under my care in January last, at the New-York Dispensary, for "fainting turns," *palpitation, feeble, velvety impulse* of the heart, else regular, with slight dyspeptic symptoms. Under the use of mild counter-irritation over the heart, with a mixture of croton oil and sulphuric ether; and twenty drops, three times a day in a wineglass of sweetened water, of a mixture of one ounce each of the tincture of hyoscyamus with the muriated tincture of iron to a drachm of the tincture of nux vomica; with moderate walking, in a few weeks she greatly improved.

Cardiac Debility—Grief—Amenorrhœa—Phthisis.—A young lady, aged 19, English, fair, delicate, frequently sighing, having been forcibly separated from her lover by parental authority, on emigrating, consulted me in 1845 for *faintness on slight exertion, palpitation and fluttering, velvety impulse of the heart*, otherwise natural, accompanied by suppression of menstruation. Silent and sad,

> "She never told her love,
> But let concealment, like a worm i' the bud,
> Feed on her damask cheek."

Suspecting something from her manner, I learned her story from a sister, with the addition, that her friends were often obliged to watch her as she wandered on the beach, broken-hearted, to gaze on the sea. Chalybeates and the usual restoratives were tried in vain. A few months after, with a suspicious cough, came the signs of tubercular softening; and, in the wreck of beauty we sometimes see, with the alabaster forehead, the pearly eye, and hectic flush of the cheek, she gently wasted away with consumption.

Anæmic Debility of the Heart.—After reaction from loss of blood by hemorrhage, or depraved nutrition, there naturally follows exhaustion.

Weak Heart—Chlorosis—Bellows Murmur.—Bruit de Diable. Recovery.—A lady, aged 25, married, slight, pale, sedentary, consulted

me in July, 1852, for palpitation, uneasiness, *faintness on exertion, soft, variable, aortic bellows murmur*, with the first sound, and weak tapping impulse of a heart, else natural; with venous hum in the jugulars, and irregular scanty menstruation. After the use of preparations of iron, with mild sedatives, exercise, and generous diet for a few weeks, she was sent a month into the country, and returned quite well.

Dyspeptic Debility of the Heart.—A majority of the purely dyspeptic examples of cardiac functional disturbance come under the head of "*irritation.*" It is only in the *worn-out* cases that we have debility of the heart.

Debility of the Heart—Frequent Fainting—Dyspepsia—Improvement.—A merchant, aged 32, medium, pale, sedentary, married, eight years dyspeptic, consulted me in 1851 for palpitation, occasional turns of irregular intermission of the heart, with soft tapping *impulse, sometimes hurried*, and *frequent fainting*, accompanied by capricious appetite, "belching," flatulence, uneasiness, and sensation of splashing of liquids in the stomach—for which he had received great variety of treatment on both sides of the Atlantic. An oyster supper, a social evening, any special indulgence, or an exciting day's work expended the nervous energy of his heart, and aggravated all his symptoms. The faintness, or "pitching turns" as he termed them, greatly alarmed him, and were generally mere momentary loss of power, and staggering along the street or about his business. Occasionally they laid him powerless and pale on the sofa for five or ten minutes. Sometimes they were absent for days, and then repeated for several times a day. The intermission generally at every fifth beat was sometimes absent, and was *abolished at any time* by walking a few times rapidly round the room. He was ordered Hoffman's anodyne, or, in extremity, brandy and water for his fainting turns; and in the intervals, in varied succession, preparations of iron with hyoscyamus or conium, the tris nitrate of bismuth, with the tr. of columbo, &c.; tincture of nux vomica and hop; cold sponging; abstinence from his favorite cigars, late suppers, and exciting company. After various vicissitudes he is now better than for years previous, but his heart still occasionally "fails him."

Uterine and Spermatorrhœal Cardiac Debility.—Among the most common of all causes of an excessively weak heart are doubtless exhausting discharges from the generative organs.

Exhausted Heart—Menorrhagia—Improvement.—A lady, aged 36, slender, very pale, with blanched lips, having previously miscarried,

consulted me in 1849 for faintness on slight exertion, palpitation, feeble tapping impulse, of an otherwise natural heart, connected with excessive and protracted menstrual discharges. These were checked by pills of acetate of lead, with powdered ergot and extract of hyoscyamus; after which, under tonic treatment, she left the city materially improved.

Weak Heart—Spermatorrhœa—Bellows Murmur—Recovery.—A clerk, aged 22, slight, pale, with dark areola, having learned the practice of masturbation four years previous, was admitted under my care in the N. Y. Dispensary in April last, with faintness on exertion, *soft, aortic bellows murmur*, palpitation, faint tapping impulse of the heart, hurried by exercise, with feeble appetite, trembling of the limbs, and nocturnal emissions from every night to once a-week. He was ordered to sleep on a hard bed, rise early, use cold sponging, and walk regularly some distance, avoid mixed company and lascivious books; to give up all solitary practices; to irritate the loins with croton oil, and take a mixture of two drachms each of the muriated tincture of iron and the tincture of hyoscyamus, with an ounce and a half of the tincture of columbo—a teaspoonful in a wineglassful of sweetened water three times a day; and in a few weeks he left quite improved. In the heat of summer an attack of severe diarrhœa brought on temporary relapse, with the bellows murmur, from which, by the use of powders of five grains each of tris-nitrate of bismuth and gum acacia, with a grain of opium every four hours it was checked. With subsequent tonics, he soon quite recovered.

Treatment.—We have given this so fully in the cases related, that within our present narrow limits, we venture only a few brief comments. In an organ so susceptible as the heart to mental impressions, we have always, so far as a delicate regard to truth and candor would allow, avoided admitting to the patient in functional disturbance, for his own good, that the heart was at fault, mentioning the organ as little as possible, using cheerfully the phrases "nervousness," "sensitiveness," "palpitation,"—and of inquiring constantly about the stomach, or some other offending organ. Indeed many of the patients mentioned very soon forgot their weakest point.

Partly for this reason, it will be seen, with sedentary and nervous citizens we have very constantly prescribed that powerful, *cheap tonic* for the million—*walking*. To insure faithful obedience, and give an idea of its importance, we have usually ordered it in *measured doses* of a certain number of miles daily. After the first fortnight, nothing cheers a desponding, nervous or dyspeptic patient so much. He soon

feels, by the increased ease and comfort with which he executes his allotted task that he is really stronger. And then it relieves congestion by gradually distributing the blood to the chilly feet and hands; it gives tone to the stomach, and sometimes a voracious appetite; it is nature's laxative; it restores, by its grateful glow, the functions of the skin; it increases muscular energy; and it calms the irritable nervous system by its agreeable invigoration and the quiet sleep it begets at night; and lastly, by its gentle stimulus, it actually strengthens a weak heart. Providence has mercifully made our most necessary blessings easily accessible. Man was originally a *field animal.* Walking was the primitive exercise of our first parents in the bowers of Eden, and it is still healthier, in the main, than any other. We had occasion recently to make it a condition of attendance on a rich, fine lady, that she should, for a time, abandon her carriage for nature's locomotion, and in a few weeks we were *gratefully* obeyed.

Of great importance to the functions of the stomach, liver, nervous system, and, through them, to the disordered heart, is attention to that extensive surface, the skin. By telling delicate patients, if necessary, to retain the garments on the upper limbs, while the lower extremites are cleansed and vice versa; or, in cold damp weather, by adding a little alcohol or cheap spirit; and especially by free frictions, with a coarse towel or flannels, the most sensitive may sponge the body, on rising in the morning, with cold water at the coldest season of the year.

Of the medicinal means employed, we have only space to notice a class whose direct tonic influence upon the heart, and nervous system, we believe to be greater than any other. We refer to preparations of nux vomica, and its alkaloid, strychnia. Especially in dyspeptic complications and in excessive "debility of the heart," they are invaluable. For safety and convenience, we prefer either the strong tincture of the vomica nut or an equal quantity of the more uniform solution of the ordinary strychnia of the shops, the strength of a grain to the ounce, rendered soluble by the addition of one part of acetic acid to three of water—either preparation to be given in doses of five drops three times a day, in water, increasing cautiously, if necessary, to fifteen drops,—resting, if the tingling and twitching of "strychnism" occur, and commencing in smaller doses when they subside.

In explanation of their therapeutic effects, we may mention the beautiful recent experiment of Dr. Marshall Hall, in rousing the nervous system of the frog, stunned by division of the spinal marrow, by means of a solution of the acetate of strichnia, and the still more conclusive test of Prof. E. Weber, mentioned by Romberg, of producing

by the application of strichnia to the severed palpitating heart of the frog, *tonic contraction.*

In conclusion, we tender our grateful acknowledgments to the members of the Society of Statistical Medicine, for their kind encouragement, in completing this sketch, necessarily brief and imperfect,* but conceived, it is hoped, in their spirit, based only upon *facts*—open to candid correction, and penned in the sincere desire to regard only the teachings of nature in the interpretation of medical truth.

ART. X.—*On the Effects of Poisons and Medicines upon the nursing Child when taken by the Nurse.* (Translated from the Journal für Kinderkrankheiten.)

AT the session of the *Society of Practical Medicine*, Paris, in Feb., M. Courserant related a case in which he had prescribed an infusion of belladonna leaves as a local application in the purulent ophthalmia of an infant. The mother, thinking that it was intended for internal use, chose to take it herself, that her child might obtain the effects through the milk. Mr. C. found her prostrated and delirious, pulse thready, tongue dry, and skin cold; coffee, spirits, and ammonia were given with good effects. Instead of the child, a small dog was applied to the breast, and in two minutes it was attacked with cramps. On the fourth day the child began to nurse again with no bad effects. P. Dubois thought it doubtful if poisons taken by the nurse could impregnate her milk. He had often given opium in large doses to nurses, but their infants were not affected. In the case of a woman attacked by cholera and nursing an infant six months old, he gave opiate injections to slight narcotism, but without harm to the nursing child. He had also applied extract of belladonna to the os uteri of a female in labor, and produced delirium, during which the delivery took place, but the child was not affected. Still, he should delay putting the child to the breast under such circumstances as long as possible. M. Guersant stated that he had treated a child suffering from a persistent diarrhæa, and consequent loss of flesh; it was finally given to a wet nurse, and a young dog applied to the mother's breast, which was immediately seized with a diarrhœa and soon after died. This proves that the milk can assume a poisonous character, either by an internal alteration or by external influence.

---

* We hope to supply these defects, and to add more illustrations, and a statistical analysis of cases, soon, in a small volume.

PART SECOND.

CRITICAL ANALYSIS.

ART. XI.—*Practical Observations on Aural Surgery, and the Nature and Treatment of Diseases of the Ear.* With Illustrations. By WILLIAM R. WILDE, Surgeon to St. Mark's Ophthalmic Hospital, Dublin, etc. 8vo, pp. 475. Philadelphia: Blanchard & Lea, 1853.

A Treatise on Operative Ophthalmic Surgery. By H. HAYNES WALTON, Surgeon to the Central London Ophthalmic Hospital, etc., etc. First American from the first London edition. Illustrated by one hundred and sixty-nine engravings on wood. Edited by S. LITTELL, M. D., Surgeon to Willis Hospital for the Eye and Limb, etc. 8vo, pp. 599. Philadelphia: Lindsay & Blakiston, 1853.

AURAL and ophthalmic surgery are, by common consent, associated in the same department of practice. The analogy existing between the eye and ear, as organs of special sense, both in their anatomical arrangement and physiological action, is preserved also in their pathological state. This resemblance is however too slight to be of much practical advantage, and we group under the same head these two works upon special surgery, for convenience of notice, and not for the purpose of comparison of opinion. The announcement of a new work on the diseases of the ear will arrest the attention of every practitioner. No class of diseases has puzzled him more, for of none has he had so little accurate knowledge, and such meagre and unsatisfactory sources of information. The work best suited to the wants of the laborious physician, and the safest guide, as a manual of practice, has been the treatise of Kramer, published in 1838. But, since that date, such have been the advances made in the study of aural pathology —not less through the labors of this enlightened author than the observ-

ations and investigations of Lincke, Frank and Schmalz in Germany; Deleau and Itard, in France; and a large number of English writers, of whom Mr. Toynbee deserves especial mention, for his careful dissections—that Dr. Kramer has in a more recent work discarded his earlier opinions as no longer tenable.

Evidently, therefore, a new work on aural surgery, based upon more recent and reliable pathological views, and consequently more correct in its therapeutical details, was in demand. The treatise of Mr. Wilde supplies this deficiency. Taking advantage of the investigations of preceding authors, and adding his own careful observations, and laborious analysis of a large number of clinical cases, he has given to this department its legitimate rank in surgical science and art.

The treatise before us contains the result of ten years' experience in the treatment of the diseases of the ear, in an extensive practice, and the management of a large public institution in Dublin. The number of cases which came under observation at this hospital, during the last eight years and a half, was 2385, and of these 200 are very carefully tabulated. During this period the author has published several articles on the diseases of the ear, in the *Dublin Quarterly Journal*, and the *Medical Times*, which attracted considerable attention, and one of which was translated into the German language. The present work was issued simultaneously in this country, Great Britain and Germany. The edition in this country was issued under the editorial supervision of Dr. Addinell Hewson, a former pupil of the author. With these explanatory remarks, we shall proceed to the analysis of the more interesting and practical portions of the work in hand.

The first chapter of fifty pages contains the history and bibliography of Aural Surgery, and the subject is treated with an evident fondness for criticism. The student would do well to read also in this connection Dr. Kramer's *Critical Literary Review*, introductory to his work on the diseases of the ear, which contains an excellent analysis of the early writers.

Preliminary to the study of the special forms of disease, Mr. Wilde devotes two chapters to the *Means of Diagnosis, Statistics and Nosology of Ear Diseases.* The directions given under the former head are of such practical consequence that we shall detail them at length, but as briefly as possible.

The first and grand point in the treatment of diseases of the ear, is accuracy of diagnosis; and in order to this it is indispensably necessary to understand the best method of conducting an examination. The following is, in substance, the author's directions:

We are first to observe carefully the condition of the concha, external meatus, mastoid process, infrazygomatic region, and the space immediately below the lobe of the ear; then the auricle, in its various folds, its color, its temperature particularly, its thickness, as learned by feeling its hem or helix between the fingers, and the angle which it forms posteriorly with the cranium; also the position, size, shape, and color of the external meatus, as seen without altering the relaxation of the parts. To examine the outer third of the auditory canal, the upper rim of the helix should be grasped between the finger and thumb of one hand, and drawn upwards, backwards, and outwards, while the thumb of the other hand, placed in front of the tragus, draws it and the integuments forward upon the zygoma. The finger should then be pressed deeply and firmly upon the movable root of the tragus, and backwards between it and the articulation of the jaw; and upon the patient's opening and shutting the mouth, we are to notice the amount of pain which it produces. The middle and fore-finger should also be inserted deeply behind the ramus of the jaw towards the styloid process, and notice taken of the sensations experienced.

The mastoid process claims especial attention when inflammatory action is suspected. Firm pressure is to be made upon it with two fingers; and the same careful examination should extend to the posterior and lateral portion of the head, to the insertion of the sterno-mastoid muscle, as well as its upper third. A small gland, situated over the middle of the mastoid process, frequently becomes enlarged, and is the seat of severe neuralgic pain in aural inflammations. Percussion of the mastoid process occasionally affords some information.

We are next to examine the auditory canal, and external surface of the membrana tympani; and to effect this the patient should be placed opposite strong and direct sunlight, so as to allow the sun's rays to fall directly into a tubular speculum. Any wax, or other mechanical impediment which may be present, should be removed; if they are the chief cause of the deafness by completely obstructing the passage, they should be removed with a syringe and plain water; but if there is also present other, and especially inflammatory affections of the meatus or tympanal membrane, a pair of fine forceps should be used, as the injection will, by increasing the vascularity, mislead as to the actual amount of disease. For this purpose a pair of forceps having an angle in the shaft are to be preferred.

For the examination of the external auditory passages and membrana tympani, Mr. Wilde prefers the tubular speculum to all other instruments hitherto invented. These instruments consist of conical sil-

ver tubes of different calibres, each tube being an inch and a half long, five-eighths of an inch wide at the greater aperture, and varying from two to four lines in the clear at the smaller extremity. They should be made as light as possible, highly polished, both inside and out, with a stout rim or burr round the larger margin, and the smaller aperture well rounded off, so as not to irritate the ear in entering. He has tried them of various shapes and sizes, their sides running at different angles, and also with the interior blackened, so as to prevent reflection of the incident luminous rays, but found none which were equal to those just described. As different sizes are occasionally required, he has a set of three, formed so as to fit into one another for convenience of carrying. In using the speculum, sunlight is to be preferred to any artificial contrivance for the use of lamplight. While the auricle is drawn upwards and backwards with one hand, the proper-sized tube is inserted with the other, and pushed in as far as possible without giving pain; the head of the patient and the tube are then moved slightly, so as to permit a full stream of light to fall upon the tympanal membrane. By moving from side to side the larger aperture held between the fingers, the parts about the membrana tympani may be examined; and, by withdrawing it slightly, the whole canal may be carefully and accurately examined.

We should note in this examination the form, curvature, color, polish, vascularity of the entire auditory canal. If wax, muco-purulent discharge, or cerumen obstruct the view, it must be removed by a small spatula or a probe wrapped around with cotton. The points to be noticed in regard to the membrana tympani, are its color, transparency, tenuity, vascularity, arrangement of its vessels in every part,—its tension, flexibility, polish, curvature, and its position as regards the interior of the cavity, of which it forms the outward boundary,—the direction and projection of the handle of the malleus, and the character of the membrane, both above and below the attachment of this bone. The patient should also be directed to inflate the Eustachian tube, by expiring strongly while the mouth and nose are closed. While the air is forced into the drum we should note whether the membrane vibrates, or its tensity is altered, the degree of vascularity produced, as well as the position and course of the vessels, and finally the existence of a perforation of the membane which may now become apparent. The tube should now be removed, and the ear applied to the external auditory passage, to estimate the character of the sound produced in the middle ear by this inflation, whether it be the normal rush of air, or a prolonged squealing or gurgling sound, made by contraction of the

Eustachian tube from dryness, or an accumulation of mucus in it or the cavity of the tympanum. If the patient is unable to inflate the tympanum, and there is reason to suspect that the Eustachian tube is obstructed, or that there is an accumulation of mucus, blood, pus or other matter in the middle ear, and there is no inflammation present, air may be ejected by mechanical means, if the case require it.

Mr. Wilde enters into a minute description of the instruments which he employs in catheterizing the Eustachian tube, and the best method of operation. As this operation, however, is far less often required than has been supposed, we shall not stop to describe the different methods proposed.

Mr. Wilde strongly condemns the practice of indiscriminately probing and syringing the ears, without a proper inspection of the parts. If there exists an inflammatory condition of the auditory canal, or membrana tympani, the symptoms will be decidedly increased by such a proceeding. The degree of deafness is best learned by measuring the hearing distance with an ordinary watch held near the external meatus. It should also be held behind and in front of the auricle, and between the teeth, and in each instance the degree of hearing carefully noted. The throat should be carefully examined, the uvula, tonsils, and the orifice of the Eustachian tube, by the pressure of the finger. The voice also manifests a change in cases of long-continued deafness; the patient expresses himself in a loud tone, speaking as if out of breath, with a whistling sound, and at length the utterance becomes indistinct. Such cases the author considers unfavorable. The last prominent symptom to be interrogated is *tinnitus aurium*, of which the author remarks:

The value of tinnitus as a diagnostic has been greatly overrated. It is certainly one of the most distressing as well as the most frequent symptoms attendant upon affections of the organs of hearing, but its cause is very obscure and difficult to comprehend, and its removal still more difficult to achieve. I know no symptom concerning which a more cautious prognosis should be given, as it is one common to almost all, and peculiar to none, of the diseases of the ear. Like muscæ volitantes in the eye, it may exist as an isolated symptom, or it may be an attendant upon several aural diseases. It is often caused by cerebral disease; therefore, we should carefully inquire whether it is felt in the head or in one or both ears; it is sometimes an accompaniment of derangement of the circulating, digestive, or uterine organs; of congestion of the brain, hemorrhage, hypochondria, hysteria, chlorosis, anæmia, typhus, influenza, or simple catarrh; of closure of the external meatus, obstruction of the Eustachian tube, and impaction of the auditory passage with wax; a foreign body, or even a hair resting on the tympanal membrane, as well as engorgement of the lining mem-

brane, or mucous collections in the tympanal cavity, and also nervous deafness, will all produce it. Furthermore, we may remove the original disease, give a healthy action to the affected organ, and restore its function,—yet will the noise remain. It is always most felt at night when the patient lies down to rest; it is least experienced in the open air, in a crowd, or when travelling in a carriage. It seldom or never coëxists with an open tympanal membrane, and, therefore, perforation of the drum has been resorted to, and occasionally with effect, to relieve patients of this distressing malady. In cases of complete acquired deaf-muteism it is not present. So great is the discomfort which it gives, that persons incurably deaf, and who are quite conscious of the impossibility of restoring their hearing, will still apply to be relieved from this haunting and most annoying symptom; and therefore it is, that, in the quack advertisements, we always read of the "promise to cure ringings and noises in the ears." The peculiar characters of the tinnitus, and the noises to which it is likened, are as variable as sound itself. Do these characters depend upon the cause of deafness, or the portions of the organs affected? I have taken some pains to investigate the subject, and I believe not. They are no more dependent upon the causes of the disease, nor the structures engaged, than the peculiar form which ocular spectra and motes floating before the eyes are contingent upon the parts concerned in ophthalmic or cerebral diseases. No one has yet been able to arrange or classify the peculiar description of muscæ contingent upon congestion, amaurosis, choroid disease, cataract, or disease of the brain or its membranes, no more than they can satisfactorily account for both muscæ and "noises in the ears" in cases of hemorrhage.

The correctness of the estimate, which the author puts upon tinnitus as a symptom, is seen from the investigations of Kramer. (*Brit. and For. Med. Rev.*, vol. 24.) In 2000 cases of aural disease, tinnitus was present in 1267; in accumulations of wax, acute inflammation of the membrana tympani, and nervous deafness, it was present in 3 cases out of 4; it was as often absent as present in catarrhal and phlegmonous inflammation of the auditory passage, otitis interna, and in muculant obstruction of the middle ear; and, finally, in chronic inflammation of the membrana tympani, it was twice as often absent as present. The writer of this Review very justly concludes that tinnitus has not the slightest value pathognomonically, prognostically, or therapeutically.

Mr. Wilde closes this chapter with some remarks upon the proper mode of applying the remedies employed in aural affections. As most of these diseases are inflammatory, depletion, local rather than general, is usually necessary. The best method of abstracting blood is by leeches, and to be most effectual they should be applied immediately around and within the edge of the external meatus. "From four to six leeches may be readily attached round the meatus, and in this situation they will

produce more immediate and permanent relief than three times the number affixed behind the auricle. The application in front of the tragus is also very much more effectual than upon the mastoid region. When, however, the latter locality becomes itself the seat of inflammatory action, they should also be applied freely all over it. Where we have already recently applied leeches in the two first-mentioned places, and the parts have thereby become swollen and irritated, the next most advantageous position is beneath the lobe of the auricle, behind the ramus of the jaw. I do not know any painful affection in which leeches, applied in the manner directed, produce the same amount of immediate relief as in disease of the ear. They should be had recourse to again and again, even upon the same day, and applied in numbers, to relieve paroxysms of pain, as well as to lessen the degree of redness and vascularity observable in the inflamed parts."

Of counter-irritants the common fly-blister is the most useful in acute cases, and pustulation by tartar emetic ointment in chronic cases. They should be applied to the mastoid region, care being taken to protect the auricle. "When there is much neuralgic pain complained of, extending from the ear over the side and back of the head, I have found the compound camphor liniment, with extract of belladonna, one of the most useful applications; but, in this preparation, care should be taken to rub the belladonna first with a little water in a mortar, otherwise it will not mix with the liniment. In children and young persons the strong tincture of iodine, containing some iodide of potassium, is a very useful remedy, and probably acts specifically as well as a stimulant; it should be applied with a camel-hair pencil daily, or every second day, unless the part begin to vesicate or the cuticle to peel off, when the application should be discontinued for a few days. The use of iodine, however, by the endermic method, is only of value by being long persisted in."

The application of heat and moisture are very grateful, and may be employed by holding the ear over the vapor of very hot water in the bottom of a long, narrow vessel, medicated with hyosciamus, opium, belladonna, marsh-mallows, camomile, or poppy-heads; or by a warm linseed-meal poultice, frequently renewed.

The author deprecates the practice of pouring stimulating or sedative liquors into the ear; nor has he any faith in electro-magnetism, galvanism, or electricity, in relieving deafness.

Mercury is the medicine upon which he places the most reliance, from its efficacy in controlling inflammation and removing its products. The same rules which guide in the administration of this remedy in oc-

ular affections, may safely be adopted in diseases of the ear. The following remarks upon the virtues of the bichloride must accord with the experience of every practising physician:

The third, and perhaps the most efficacious form, in which mercury may be used, is that of the bichloride, still commonly known in this country as the oxymuriate, one of the most valuable medicines of the entire Pharmacopœia. A treatise might be written on the virtues of this remedy, and the vast field of disease over which it exercises a sanative influence. Combined with Peruvian bark—which the chemists say is incompatible, but the product of the decomposition said to be produced by which, may be the very substance which acts most beneficially—it is almost a panacea for most of the strumous inflammations in children and young people; and its power in controlling scrofulous ophthalmia, corneitis, iritis, &c., extends equally to the cure of kindred affections in the ear. It is the best remedy I know of for inducing absorption of lymphy deposits in the membrana tympani, and general thickening and opacity of that structure, as well as very old cases of chronic inflammation of the membrane of the cavitas tympani. It is, moreover, when properly administered, one of the safest as well as the surest preparations of mercury: it may be taken for a great length of time; it seldom interferes with the ordinary occupations or amusements of the individual; it leaves no ill effects; it rarely induces ptyalism; and patients improve in health, and absolutely grow fat while using it.* It may be given alone, either in pills or dissolved in nitrous ether, proof spirits, or some of the tinctures, such as cascarilla, but it is much more soluble in distilled water than is generally known; it may be combined with the muriated tincture of iron with good effect, or with some of the preparations of sarsaparilla; but bark —either the tincture, syrup, or decoction—is of all others the medicine best suited for its administration. Our Dublin preparation of the syrup is, particularly for children, a good vehicle for it, provided the mineral is first dissolved in a little distilled water. Oxymuriate of mercury and bark sometimes disagree, producing, shortly after being taken, pain in the stomach, tenesmus, griping, and even diarrhœa; in such cases it will generally be found that it was taken before breakfast or on an empty stomach; it should therefore be administered an hour or two after meals. But when it disagrees, even with such precautions, a separation of the constituents will obviate the unpleasant effects: thus the mercury may be taken an hour or two before or after the bark. From the sixteenth to the eighteenth, or even the quarter of a grain, may be taken three times a day, according to the circumstances of the case, for weeks and even months together, with, however, short intervals occasionally.

Mr. Wilde devotes the succeeding fifty pages to the *Statistics and Nosology of Ear Diseases.* We need not dwell upon the matter of

* I understand that the bichloride of mercury, in large doses, is used to fatten and improve the condition of horses in the West Indies.

this chapter farther than to state that the nosological arrangement which he adopts is according to the anatomical divisions of the organ of hearing, the anatomy of each being given preliminary to the consideration of the several diseases to which it is subject.

Chapter IV. is devoted to the *Diseases of the Auricle, Mastoid Region, and External Meatus.*

Wounds and Injuries of the Auricle.—These accidents are of infrequent occurrence, except in countries where mutilation of the external ear is a capital punishment, or fighting with small swords is much practiced. Piercing the lobe is sometimes attended with erysipelatous inflammation, eruptions, and abnormal growths. The treatment of these accidents is simple, and need not be dwelt upon.

Tumors of the Auricle.—Morbid growths occurring upon the external ear are not uncommon. They may be situated upon the lobe, or upon the inner or outer aspect of the helix. Fibrous tumors not unfrequently form in the lobe, the result of piercing it, an example of which Mr. Wilde gives, with the operation for its removal. These tumors are liable to return after excision. Mr. Paget (*Surgical Pathology*) mentions a case in which both lobules were excised for the removal of such tumors, but on one side the disease returned in the cicatrix; this was again removed, and it did not return. Hypertrophy of this lobe occasionally requires an operation for its removal.

Inflammation of the Auricle.—Simple phlegmon is generally the result of stings of wasps or bees; boils frequently form upon it, and are more often seated around or within the meatus. Dr. Bird, a German physician, has described a form of inflammation peculiar to insane persons, in which the auricle swells, and in some cases the skin breaks. The treatment consists in hastening suppuration, and the free evacuation of matter when it forms. Erysipelas often attacks the auricle, arising from mechanical injury, general otitis, or, which is generally the case, from an extension of the disease from the head or face. Kramer describes a scirrhous degeneration of the auricle, which Mr. Wilde very properly considers chronic erysipelas, arising from an acute attack or a cutaneous eruption. Dr. Graves recognized a form of gouty inflammation of the auricle, which subsides on the occurrence of the disease in the extremities.

Cutaneous Affections of the Auricle and Meatus.—The most frequent of these are eczema and herpes. These affections may occur in the young or old; in the former they pursue a more active course, coexisting with scald-head, while in the old they are generally more chronic. In either case they are liable to extend into the meatus, and

over the membrana tymphani. In old persons branny scales collect in the tube, but in the young the lining of the canal and tympanal membrane becomes coated over with a creamy discharge. The treatment of these diseases is thus given by our author:

Cleanliness and attention are indispensable to the eradication of these affections. In the first instance, continual poulticing with any emollient substance which keeps up heat and moisture is necessary. Linseed meal, boiled bread and milk, or well-mashed turnips, will be found useful applications. Afterwards, when the extreme heat, swelling, vesication, and redness, have subsided, a solution of the liquor plumbi, in the proportion of a drachm to the ounce, applied with several bits of fine lint, so as to completely envelop the auricle, and the evaporation prevented by covering over the whole with a piece of oiled silk, rarely fails to lessen the irritation, and reduce the parts to a healthy condition. The solution of gutta percha in chloroform, lately introduced by Dr. Graves in the treatment of other skin diseases, I have found a very admirable remedy in the chronic form of eczema aurium. The part should be painted over several times, until a complete varnish has been laid on, when the greatest relief from the heat and itching is experienced. The application should be repeated from day to day, as the material soon begins to peel off, but should never be applied until the acute attack has subsided. When the auricle is shining, of a bright red, and swollen, punctures made with the point of a lancet, particularly in the helix, will give great relief. In the chronic stage good may be effected by painting the part with a strong solution of nitrate of silver.

But while we employ these local measures, we must not neglect constitutional means. Strict attention to diet should be enforced; salt meats, savory dishes and pastry, ought to be avoided, and a sufficient quantity of fresh vegetables should be consumed at dinner. After the patient has been well purged, a course of Plummer's pills may be prescribed with advantage—at least, five grains daily for an adult; and, in a little time, some of the preparations of sarsaparilla administered in lime-water, will hasten the cure, and assist to eradicate the disease from the system. This affection is very apt to relapse, and we should, therefore, continue both our local and constitutional remedies long after the inflammatory symptoms have subsided. Old ladies think that they can never have a sufficient amount of warmth about the head, and it is very difficult to induce them to leave off even one flannel nightcap; but we should at least make the attempt, as the head and ear ought to be kept as cool as possible. As the swelling and inflammatory symptoms subside, we should again turn our attention to the state of the auditory tube. If any discharge exists, the meatus should be syringed gently with tepid water daily; and both it, the concha, and the tympanal membrane, washed over every second or third day with a solution of nitrate of silver of the strength of at least twelve grains to the ounce. Still more advanced in the progress of the treatment, when the exudation has completely ceased, and the thickened cuticle has been quite removed, much benefit will be derived from

smearing over the tube and membrana tympani with brown citrine ointment (*Ungt. Citrinum Fuscum*) every third or fourth day. It should be applied in a melted state with a camel's-hair pencil, and diluted by about one-third of almond oil. This ointment, in which I have great faith in all diseases similar to that now under consideration, should be made with either rape-oil or cod-liver oil, instead of the olive-oil with the lard or butter usually directed in the Pharmacopœias; it is then of a much darker color, and never becomes hard or crumbly.

Diseases of the Mastoid and Pre-auricular Region.—Our author specifies six kinds of post-aural tumors, with which the surgeon should be familiar. The first is a small gland lying upon the mastoid process, on a level with the tube of the ear; it may enlarge to the size of an almond, and become so painful as to resemble a neuroma. It generally occurs in young females. The application of iodine and administration of tonics, especially iron, will effect a gradual cure. The second form is a suppurating gland, occurring in scrofulous constitutions, or persons who have suffered from an inflammatory action of the middle ear or external meatus. It is often seen in children during dentition. A point of diagnostic importance is the situation of this gland, which has its principal bulk below the level of the meatus. The treatment is the same as in the former case. The third form resembles a lumbar abscess, and, like it, is generally connected with diseased bone. The author gives the case of a boy laboring under this disease upon both sides; each tumor was of the size of half a hen's egg, fluctuating, painless, and occupying all the bare space behind the auricle. The skin was nearly of its natural color, but traversed by blue veins. The tumors were opened, and discharged a curdy, scrofulous matter; the child's health gave way, and death ensued from "water on the brain." The fourth form is the result of acute inflammation, either from acute periostitis of the mastoid process, or accumulations of matter in connection with the mastoid cells, the result of disease spreading from the middle ear; or, finally, caries from otorrhœa. This form of tumor requires prompt attention, as the diseased action is liable to extend to the inner table of the cranium, to the meninges of the brain, and even the brain itself. The proper treatment consists in laying the tumor freely open down to the bone. The fifth form of tumor is aneurism of the posterior aural artery; and the sixth, malignant fungus.

Foreign Bodies in the Auditory Canal.—Mr. Wilde condemns rude efforts to extract foreign bodies from the ear as more likely to do harm than these bodies themselves. He mentions instances coming

under his own observation, where the patient has suffered no inconvenience whatever, until attempts were made to remove the offending substance, when the ear became excessively tender, and the seat of most excruciating pain. Not unfrequently, in such cases, as Mr. Wilde's examples prove, and as we have ourselves known, the bony canal of the tube has been denuded of its lining membrane, and even mistaken for the foreign body. The following case is in point:

A practitioner brought a child to my house, who, while playing with some pebbles, allowed a small white stone to slip into the external meatus six hours before. She had not complained of pain; but the friends became alarmed, and were most anxious to have the pebble removed, "lest it might get into her brain." He had, he said, used various instruments, but without success, to extract or dislodge the pebble. The child appeared then in great agony, and the countenance was highly characteristic of the distress experienced. There was considerable hemorrhage from the ear, and the external aperture had already begun to swell. Upon examination, I found the meatus extensively lacerated, and could perceive and touch a white, rough surface on its anterior wall; but as I felt sure that it was not the offending body, but the denuded bone, I recommended, strongly against the wish of my friend, a cessation of hostilities, at least until the hemorrhage had ceased. A leech was applied to the margin of the meatus, and afterwards a poultice placed over the ear. Upon visiting the patient next morning I found that suppuration had been established during the night, and on syringing the ear with a little tepid water, the white quartz pebble appeared at the external aperture, and was easily removed with a forceps. Upon further examination, I found that the membrana tympani had been ruptured anteriorly, and that the bone was denuded for a considerable extent by the efforts made to extract the foreign body. The parts, however, eventually resumed their natural appearance.

If syringing the meatus with simple warm water fails to dislodge the substance, resort must necessarily be had to instruments. Mr. Wilde uses a small silver spatula, slightly curved, at its extremity. The canal being brought fairly within the field of the speculum, the operator may, with the spatula, in nearly every instance, dislodge the body. If it has got in a situation where it can not be got at, syringing may so alter its position that it can be removed with the spatula, or seized with forceps.

Diseases of the Cerumenous Glands.—These glands may have an increased, diminished or changed secretion, the two former conditions depending upon the degree of inflammation existing around or within the meatus, and the latter upon a chronic inflammation existing in the glands themselves. The practioner is often required to treat affections of the ear depending upon collections of wax in the meatus. Mr.

Wilde found 579 cases in 2385 cases of disease of the ear. Kramer gives 213 cases in 2000 cases; and Clarke* 16 cases in a total of 140. In these cases deafness is often a marked symptom, the degree of which depends upon the size of the plug occupying the auditory passage, and its consistence. The patient sometimes hears a slight report in his ear, especially after eating, when the hearing becomes immediately improved. This is owing to the plug of wax becoming disadjusted so as to admit the passage of air to the drum. But the improvement is only temporary, for the wax comes again to fill more or less completely the passage. The treatment of these cases consists in removing the wax, and for this purpose a jet of fluid should be directed against the *edge* of the plug, with a small syringe. Sometimes it may be removed with fine long-bladed forceps. If we fail at the first sitting, a few drops of warm oil should be introduced, and a bit of cotton moistened with oil placed in the passage to soften the plug. The following case illustrates the author's method of procedure:

L. W., a male aged forty, applied on account of deafness in his left ear of some weeks' standing, but which had recently increased very much. Complains of noise like that of a boiling kettle. Hearing distance, two inches; says it varies from time to time, but that it was always better after eating until lately. Occasionally he experiences a loud noise, as if a report took place in his ear, after which the hearing is improved. His disease is of twelve months' standing. Upon examination, I found the external auditory passage filled to its aperture with hard, brownish, inspissated cerumen. It is so hard, that percussion with a probe conveys the sensation to the fingers as if struck against a body as firm and resisting as stone. Numerous short but firm hairs grew around the external aperture, and some of the more internal ones are probably mixed up with the hardened cerumen, and so assist to keep it immovably fixed in its place. The mere projection of a stream of warm water from a syringe will not easily remove such a thoroughly impacted mass as this. It must be assisted out with the spatula, slightly bent at the end, like the old lever used in midwifery: but the ear should be syringed from time to time as we proceed with our manipulations. When well loosened, I removed it *en masse* with a pair of fine forceps, and perceived that with it came out a large collection of hairs, which had become entangled within it; and that all its lower portion and its extremity was covered over with a layer of soft, white, thickened cuticle, the natural lining of the surface with which it has been so long in contact, thickened and separated by the pressure exercised upon it by this foreign body. Immediate relief to all the symptoms under which this person labored was experienced by the removal of the foreign substance. The hearing in-

* *Am. Jour. Med. Sci.*, July, 1852.

creased to twelve inches, and the noise lessened considerably. Upon inspection through the speculum, the membrana tympani was seen whitish and succulent, and having the parboiled appearance of the piece of cuticle which had been removed from it. Several large red vessels also ramified upon its surface, and coursed along the insertion of the malleus in particular. This condition was, no doubt, caused by the pressure of the accumulated and hardened cerumen; but in a few days the part recovered its natural character.

Inflammations of the External Auditory Canal.—One of the most frequent of these affections is abscess in the external meatus. It is the analogue of a stye upon the eyelid; but, being situated in a different structure, is far more painful. Its development is attended with tinnitus, and throbbing, and by evening exacerbations of pain, heat of skin and restlessness. There is not much redness of the part, and the abscess may not exceed the size of a pea; it approaches the surface slowly, pointing internally, and its contents consists of thick yellow pus, and a hard corn of dead cellular tissue. To prevent suppuration the solid nitrate of silver should be applied, but when matter has formed it should be set free with the knife. Warm fomentations, and the steam of hot water, may be employed to relieve pain. Mr. Wilde considers this disease constitutional, depending upon the same cause which produces boils in other parts of the system, and therefore recommends a careful treatment directed to the system, such as the regulation of the digestive organs, and the exhibition of bark with liquor potassæ.

Diffused inflammation of the external meatus generally involves the external layer of the membrana tympani, and ends in otorrhœa. It is a disease of infancy and youth, and appears more often in scrofulous constitutions. It may be idiopathic, traumatic, or specific, as when it occurs in the course of exanthematous fevers, or from the infection of gonorrhœal matter. The acute attack is characterized by dryness, itching, and heat of the part, a dull, aching pain, which gradually becomes acute, increasing towards night; fever, and even delirium. The lining of the meatus swells, is at first dry, then white and moist, and finally a purulent discharge takes place with relief to all the severe symptoms. The tube is sometimes coated with a layer of plastic lymph. The following case is given by the author as illustrative of the progress of this form of inflammation:

T. S., aged 46, a shopman, complains of deafness in his left ear, of a fortnight's duration, accompanied by a buzzing noise and throbbing. The disease commenced late in the evening, with severe pain, which continued all night, and which, although mitigated, has never entirely ceased since, but is always most distressing at night. Upon the fifth

or sixth day he perceived a "slight moisture" in his ear, but was not conscious of any sudden burst, or a feeling as if something had given way within. The external meatus and auditory tube, as well as the surface of the membrana tympani, are coated over with a tenacious muco-cerumenous discharge, upon the removal of which the entire surface brought into view appears of a florid red, becoming pinkish and spotted with white on the face of the membrana tympani. Flakes of cuticle adhere to the walls of the canal. The spots on the membrana tympani appear to be patches of lymph effused on its surface; they are more of a yellow color than the specks of cuticle on the tube. The membrana tympani is still imperforate. We occasionally find the whole surface of the tympanal membrane covered over with a sheet of lymph like that which lines the trachea in cases of croup. He cannot hear the watch even on touching. On the right side the parts are healthy, and the hearing good. The treatment recommended to the patient has only aggravated his disease,—brandy and oil, laudanum, hot salt, and various stimulating applications, having been poured into the meatus.

This is a case too manifest to be mistaken; and, from the total loss of hearing upon the left side, it is probable that the inflammatory action has extended to all the layers of the membrana tympani, and has also passed into the cavity of the middle ear. Had it commenced in the latter, the pain and attendant fever would have been greater, and, on suppuration taking place, the membrana tympani would probably have been ruptured to allow the exit of the matter, and the case would now be one of internal otorrhœa, with perforation. Cases of this nature are very common during the winter months, or when cold east winds prevail in March and April; and are frequently induced by travelling upon the top of a coach, sitting opposite an open door or a broken window, or being exposed to a draft of cold air in any situation. I am frequently consulted by Roman Catholic clergymen during the season of Lent, for inflammation of the ear acquired while sitting in the confessional-box, often for hours together, in cold exposed places of worship, with the ear applied to a small aperture through which the wind is playing. In the foregoing case, local depletion, continued counter-irritation, and alterative doses of mercury, restored the parts to a healthy condition, and the hearing returned. In some cases of inflammation of the auditory canal the auricle is hot and swollen; but in no instance does it ever assume the œdematous character which the eyelids present in severe ophthalmia.

The treatment of acute inflammation of the external meatus should be strictly antiphlogistic, such as leeches about the meatus, purgatives, and the local application of heat and moisture. Counter-irritation may follow depletion; and astringent lotions are useful only when the disease becomes chronic; mercury is indicated when the tympanal membrane is involved.

Some authors mention gonorrhœa as a cause of inflammation of the meatus; but Mr. Wilde has never seen a case, nor does he believe that

facts establish the occurrence of infantile otorrhœa from gonorrhœal infection, as asserted by Mr. Harvey of London.

Cutaneous Diseases of the Meatus.—These are generally the herpetic and eczematous eruptions which extend from the auricle to the meatus. In addition to the treatment referred to, the author recommends the application of a ten-grain solution of nitrate of silver; and when the lining becomes more healthy, the use of citrine ointment.

The remaining subjects treated of in this chapter are *Morbid Growths and Alterations in the External Auditory Canal, and Malignant Diseases of the Meatus.* These sections we shall be compelled to pass without farther remark.

In chapter V. our author enters upon the consideration of the most important, but least understood, class of diseases of the ear, viz.: *Diseases of the Membrana Tympani.* These affections have not been at all understood until recently. Lincke was the first to describe true myringitis, or inflammation of the drum of the ear. Mr. Wilde divides the different forms of inflammation of the membrana tympani into acute, subacute, syphilitic, strumous, chronic and febrile.

Acute Myringitis.—The diseases of the cornea and membrana tympani are remarkably analogous, especially in regard to the effect upon these structures. Inflammation of the tympanal membrane is generally caused by cold, and is seated primarily in the fibrous layer, but soon involves contiguous structures. Mr. Wilde's statistics give 113 cases of this disease in 2385; Kramer's, 45 in 2000; and Clarke's, 7 in 140.

The following are generally the order of symptoms. A seizure of sudden and intense pain in the ear itself, most generally first appearing at night, and attended with nocturnal exacerbations during the progress of the disease. This pain is of a most excruciating kind, producing at times delirium, and is likened to that of a sharp instrument penetrating through the ear to the brain: it is, especially when the cavity of the tympanum is engorged, increased by coughing, sneezing, blowing the nose, chewing, or swallowing, or by pressing upon the tragus, particularly when the jaw is open. The beating of the carotid is distinctly felt in the ear, and each throb of the artery, especially if the circulation be excited, increases the sufferings; and there is frequently a feeling of fulness and bursting within the organ. With this there is also pain and soreness over the side of the head, in the teeth, in the eye and temple, and in the superior lateral triangle of the neck, with occasionally stiffness and soreness of the upper portion of the mastoid muscle, and often flying rheumatic pains throughout the body, particularly in middle-aged persons, and those who have suffered previously from rheumatic attacks. If neglected, or unrelieved by treatment, the pain extends to the throat and mastoid region, and is in-

creased on pressing the mouth of the Eustachian tube with the finger. The severity of the pain experienced, and the extent of soreness to the touch, is to a certain degree a test of the amount of the inflammation; and the peculiarity of the pain is also a means of judging of the seat of the inflammation; for if it is experienced in swallowing, mastication, or sneezing, &c., we may presume that the inflammation has extended over the middle ear.

Mr. Wilde continues with a very minute relation of the symptoms of inflammation of the membrana tympani, the morbid changes, &c., which will repay a careful study, but which we cannot pursue at any greater length.

The treatment consists in confinement to a warm room, local depletion, the employment of moist heat, aperient medicines, and counter-irritation. If the disease do not yield, recourse must be had at once to mercury; on this latter remedy our author places great reliance. If an ulcer appear on the membrane, it should be touched with nitrate of silver; if the mastoid process become engaged or the parts covering it, and no relief follow the use of these remedies, or fluctuation be felt, an incision should be freely made to the bone. The following case illustrates the points above alluded to:

C. L., a female, aged 21, applied at the hospital at ten o'clock on the morning of the 18th of April, 1846, for an attack of intense pain in her right ear. She states that she has not been "regular" for the last six weeks; that she was attacked four days ago with catarrh, attended with considerable stuffing in her nose, and the other usual symptoms of that affection; that she had walked along the sea-shore the day before, with a cold wind blowing upon her right side. She went to bed tolerably well last night, but awoke at three o'clock this morning with a violent beating pain in her ear, accompanied by a loud noise, which she likens to the "puffing of a steam-engine"; the pain resembles that of a sharp instrument penetrating through her ear into her head, which she describes as most excruciating. She had also some pain and soreness over that side of the head; she felt some difficulty of deglutition, owing to the pain it caused her. Coughing, sneezing, or any motion of the temporo-maxillary articulation, greatly aggravated her sufferings, and gave her a feeling of bursting in the middle ear.

She rose at seven o'clock, felt great sickness of stomach, and had a well-marked rigor whilst dressing. She immediately applied to a neighboring practitioner, who put some "drops" with a piece of cotton into her ear, which only aggravated her symptoms. Her pain still continues, and the noise has increased; there is slight redness and great heat of the auricle. The pain is increased on making pressure over the tragus in front of the meatus; on pressing or percussing the mastoid process, slight pain is also complained of. The pain in her ear, however, is not increased by these means, nor is it referred to the

tympanum. She has no pain beneath the meatus, nor behind the angle of the jaw. The hearing distance, with an ordinary ticking watch, is scarcely three inches in the right ear. On closing the meatus of the left side, the noise is greatly increased. On examination with a speculum, the auditory canal is found highly vascular, dry, devoid of cerumen, and exceedingly tender to the touch. The membrana tympani has lost its polish, and is of a bright, florid, generally-diffused red color, spotted with small patches of a deeper hue, like minute ecchymoses. The projection of the malleus can be recognized, of a darker color than the surrounding parts, with a whitish line in the centre. Below the malleus, and towards the posterior part of the membrane, a well-defined vesicle, about the size of a grain of mustard-seed, and filled with a brownish fluid, can be seen. Upon holding the mouth and nose, and pressing the air into the Eustachian tube, she experiences considerable difficulty in making it pass up upon that side, while it passes with facility into the tympanum of the left. The ear, or a stethoscope, held to the right side during this operation, readily perceives, as soon as the air reaches the tympanum, a squealing and gurgling sound, as if the air passed not only through a narrow passage, but through a fluid-like mucus. This pressure of air into the tympanum greatly aggravates her symptoms.

Upon looking into her mouth, the fauces, uvula, and back of the pharynx are found nearly of their natural color. Upon inserting the forefinger of the right hand into the mouth, and pressing its point upwards, backwards, and outwards, towards the mouth of the Eustachian tube, considerable increase of pain is experienced in the middle ear. The tongue is coated; the pulse regular; but there is heat of skin and considerable anxiety of countenance. The left ear is natural in function and appearance. This patient suffered from rheumatism of the upper extremities some time ago.

Four leeches were applied around the meatus, as far in as possible, and four in the depression in front of the tragus. She was ordered to foment and steam the ear over hot water, placed in the bottom of a long narrow mug, frequently during the day; and a purge was administered.

19th. States that she received immediate relief from the leeching. The countenance is less anxious, and she slept well all night; the noise of a steam-engine is altered to a gurgling sound; the pain and all other symptoms are relieved; the membrana tympani, however, remains nearly the same in color, but the vesicle has become flaccid. She was put on the use of calomel and opium in small doses frequently repeated; a blister was applied over the mastoid process; the fomentation and warm vapor was ordered to be continued, and a linseed-meal poultice to be applied to the external ear at bedtime.

20th. Continues to improve. Noise changed to that of the ringing of bells; the pain, on pressing the mouth of the Eustachian tube, is much less; the membrana tympani is less vascular; the general symptoms have all improved; the mercury to be continued.

21st. All the symptoms relieved; the mouth is slightly sore; no pain on pressing anywhere around the ear or meatus; all heat and

vascularity of auricle is removed; the membrana tympani has lost its vascularity, but is slightly more opaque, and whiter than natural; the vesicle has quite disappeared; three or four large vessels can still be seen coursing along the handle of the malleus. Upon forcing air through the Eustachian tube into the tympanum, a slight gurgling noise can be perceived in the middle ear, and of the peculiar sensation which it imparts the patient is quite conscious. During this operation, and while the membrana is within the field of the speculum, a slight blush of redness, of a pinkish hue, is observed to be produced in the membrane. The hearing distance has increased to four inches. A copious red deposit was observed in the urine. She has been slightly purged by the mercury; ordered to lessen its dose to one pill night and morning.

23d. Continues to improve in hearing; noise as before; she has had no return of pain in the ear: the pain and soreness in the head gone; no flying pains or other rheumatic affection; the mouth is very sore; ordered to omit the pills, and take the sixteenth of a grain of oxymuriate of mercury with decoction and tincture of bark three times a day; generous diet.

25th. Continues to improve rapidly; membrana tympani is more transparent than upon last examination. Hearing distance is increased to twelve inches; slight pain is still felt on pressure over the lower portion of the mastoid process, and opposite the point of the styloid process, in which latter place it is still increased on coughing. Ordered to continue the oxymuriate and bark, and to apply another blister.

All her symptoms have now disappeared, with the exception of a slight buzzing occasionally; the hearing is perfectly restored.

Four months later I had an opportunity of examining this young woman again; her hearing had been quite restored; but she said that she occasionally suffered from a slight "ticking noise." The membrane of the drum upon the affected side presented a slight mottled appearance, particularly towards its lower edge, but without an opacity of any account; her hearing distance is two feet less upon the right side than the left.

March, 1851. She had a slight attack of pain in the right ear, accompanied by some deafness and redness of the membrana tympani, all of which were at once removed by the application of leeches.

January, 1852. She has not had any return of pain or deafness; parts natural; hearing normal; no tinnitus.

Mr. Wilde relates an interesting case of inflammation of the membrana tympani and otitis, rheumatic in its character, from which we extract the following:

I first saw this gentleman upon the 13th February; he complained of acute pain in his right ear, which, as appears from the foregoing account, had continued off and on during the previous fortnight. The pain here described as "shooting from the ear to the temple and top of the head, accompanied with a boiling and pumping noise, like that

of a steam-engine;" the pain also appeared, according to his own description, to reach to the throat, without making the throat sore; it was increased by sneezing, but relieved by pressing the hand upon the ear and side of the head. The auricle was hot and somewhat swollen; the lining of the meatus and auditory canal was red, tumid, and completely devoid of cerumen; the introduction of the speculum, and the examination, caused a good deal of pain from the tenderness of the parts; the membrana tympani was of a dark, brown-red color, had lost its polish, and appeared to be swollen and pressed outwards: the projection of the malleus could not be discerned; pressure in front of the ear gave a good deal of pain, but there was no tenderness over the mastoid process. Rest, abstinence, confinement to the house, constant fomentations, leeches round the meatus, with small doses of blue pill, James's powder, and hyoscyamus, at night: and an aperient in the morning, was the treatment resorted to during the next few days.

Upon the 19th, his symptoms, with the exception of the pain in the ear, continued much the same; he had also flying pains of a rheumatic character in the side of the head, the wrists, feet, and generally throughout the body. The pumping and boiling noise remained unabated: the deafness now became complete upon that side. The appearance of the ear continuing unchanged, except that the meatus was more swollen, it was deemed advisable to place him under the influence of mercury,—an opinion in which Dr. Stokes, who saw him with me, at that time concurred. He was accordingly, but with some difficulty, mercurialized by means of small and frequently repeated doses of blue pill, calomel, and opium. When his mouth became sore, the pain in the ear and the noise lessened somewhat, and the general rheumatic affection disappeared; but the meatus and auditory canal now became so much decreased in calibre, owing to the thickening of the lining of these parts, that it was not possible to gain more than a glimpse of the red and swollen membrana tympani. The leeching and blistering were continued, and the surface denuded by the latter were dressed with extract of belledonna and mercurial ointment.

March 10th. The cuticle became detached, and a slight muco-purulent discharge took place from the external meatus; the ear was then syringed with plain tepid water; he was allowed a more generous diet, and placed upon the use of the hydriodate of potash, with infusion of bark and tincture of orange peel. His general health now improved; he slept better, and was able to go abroad and take exercise; the discharge, however, continued to increase, and emitted a very offensive odor; and, at the same time, he began to complain of a deep-seated soreness all over the side of the head, behind the ear, but particularly over the mastoid process and immediately below it. Towards the end of March, upon examining the ear carefully under a good light, a small polypoid excrescence of a light red color, growing from the posterior wall of the canal, and completely filling up the cavity, was detected; this I removed with a wire snare and the discharge then lessened; the soreness of the side of the head, the pumping, and the deafness, however, remained the same. Pressure over the mastoid

process and the post-aural region of the head, very much increased the soreness, and it was now evident that the periosteum covering these parts was inflamed.

During the latter part of the month of April, and all the month of May, the symptoms of periostitis remained much the same, and the scalp itself became inflamed, having a dusky, red hue, pitting on pressure, and feeling excessively soar to the touch. The treatment consisted in the frequent abstraction of blood from the affected part by means of a few leeches, and a small cupping-glass applied over the leech-bites; poulticing, inunction with different ointments, both of a sedative and absorbent nature, slight vesicants, &c., and change of air. Bark, potash, and iodine were also taken with a view to improve the general state of the constitution. He had no headache, rigors, or perspirations, and his sleep and appetite were tolerably good; still, however, the pain continued, and the dusky redness and tumefaction of the scalp remained, although there was no evidence of suppuration. It was determined, in consultation with Mr. Cusack, to make an incision down to the bone, and thus free the periosteum, and give exit to any matter which might be contained beneath it. Accordingly upon the 29th of May, I made a perpendicular incision, about two inches long, nearly parallel with the posterior margin of the auricle, by inserting a sharp-pointed scalpel down to the bone at the point of insertion of the mastoid muscle, and carrying it upwards and a little backwards. The bone did not feel rough or gritty under the knife. A pledget of lint was inserted into it; and when the hemorrhage had ceased, a linseed-meal poultice was applied over it. The wound suppurated kindly, and all the surrounding soreness of the scalp and pain on pressure soon disappeared. As the discharge from the wound increased, that from the meatus lessened, and in about ten days the wound itself healed without any exfoliation of bone. The pumping noise now ceased altogether, the discharge from the ear also lessened very much, and all uneasiness in the parts ceased.

After the removal of polypus growths, Kramer recommends the acetate of lead, in solution, as far surpassing the lunar caustic in preventing their return. "I have even," he says, "observed that the polypus of the membrana tympani, under the influence of the solution of the acetate of lead, shrivels, and is eradicated even more certainly than can be expected from an operation."

Subacute Myringitis generally appears in persons between the ages of 15 and 30. It is unattended by pain, the first symptom being sudden deafness; tinnitus is not always present, but there is a feeling of stuffing in the nose. The nature of the difficulty is learned only by inspection of the membrane, which is of a pink color when seen early, but later it becomes opaque. Mercury is as necessary in this disease as in the preceding. After the constitution has been affected by the mineral, the bichloride should be given in minute doses in tincture of

bark. To relieve the tinnitus aurium, which continues after the subsidence of the disease, Mr. Wilde recommends the arnica montana, as a medicine having specific power over this complaint. He gives fifteen drops of the tincture of the flowers or leaves in a tablespoonful of the infusion of arnica, and some cordial tincture, three times a day. After a few days the dose should be increased one or two drops daily, till it reaches thirty or more, the effects upon the head being carefully watched, and the bowels attended to. Where there is much relaxation of the mucous membrane of the throat and nose, Mr. Wilde considers tobacco smoke inhaled from a *good* cigar very beneficial, from its stimulant effects.

Syphilitic Myringitis is alluded to by but few authors. Lincke describes such a form of disease, but so loosely that it is doubtful whether he had any just conception of its true character. Kramer makes no mention of it, and the author gives but three cases. Without entering into a detailed description, the following case will give the reader in brief the characteristic symptoms and treatment of syphilitic myringitis:

Mr. A. B., aged 30, had a doubtful-looking sore upon the penis, twelve months previous to my seeing him. Considerable doubt was expressed as to the genuine syphilitic character of the sore; but it healed under local treatment. Some months subsequently he had a bubo in the right groin, and a small abscess also formed on the under side of the urethra; he then rubbed in mercury and was confined to the recumbent posture, until the swelling of the groin had completely subsided. After this he experienced great weakness and lassitude, and suffered for several weeks from sore throat. These symptoms were relieved by removal to the country; but on his return to town, an eruption appeared extensively on the genitals, thighs, and abdomen, and he had also some slight deafness. He was benefited by the use of hydriodate of potash; but the eruption came and went, both on its original seat and on the chest and extremities, during the next few weeks. I first saw him with Mr. John Evans, in the middle of October, 1847; he had then no sore throat, but a fresh crop of eruption, in the form of brownish spots interspersed with small pimples, had appeared generally over the back and the outer sides of the arms. He had also become exceedingly deaf, hearing the watch only when pressed against the auricle, and he complained of a sense of giddiness and fulness in the head, but had no pain whatever in the ears, nor any snuffing in the nose. He stated, that his deafness had occurred suddenly, a few hours after rising in the morning some days before; that he had tinnitus at the commencement, but that it had now nearly vanished. Upon inspection, the auditory canal was found dry, and the membrana tympani of an uniform dark brown-red color, so that the situation of the hammer-bone was not easily recognizable. There was no ulceration observable, nor any alteration in the plane of the membrane; but the light

was not reflected from it in the ordinary manner, thus showing it had lost its polish. These appearances were nearly the same upon both sides. He was able to inflate the drums perfectly, and auscultation afforded no evidence either of contraction of the audito-faucial passages, or of any accumulation of fluid within the tympanum.

The treatment consisted in the application of leeches round the meatus every second day, and the use of calomel and opium in small and frequently repeated doses. This mode of administering the mineral disagreeing, we were obliged to discontinue it, and substitute inunction in its stead. The deafness and the appearance in the ear remained unaltered until the morning on which salivation was produced, and then hearing was restored almost miraculously, and the next day the redness and vascularity in the ears had almost disappeared. Gentle ptyalism was kept up for some days longer. He has not since had any return either of the deafness or other syphilitic symptoms.

Strumous Myringitis occurred in 24 of the 2385 cases given in the table. This is an affection of young persons of a scrofulous habit. The first symptom is slight deafness, which is generally attributed to inattention; the meatus is dry, and the tympanal membrane has a uniform pinkish hue, the fauces appear red, and this engorgement extends through the Eustachian tube. There is no pain, or tinnitus, but crackling sensations, gurglings, and loud reports, are felt in the ear; catarrh is often present, and strumous affections of the eye frequently complicate the disease, the system is usually depressed, the patient being languid, pale and inactive. The treatment best adapted to such cases is that employed in strumous diseases generally, as tincture of bark and iodide of potassium, or bichloride of mercury; cod-liver oil, when there is a strong constitutional taint; chalk and mercury to regulate the bowels; counter-irritation by vesicating liniments. These means are to be persevered in for a length of time, and combined with careful attention to diet, air and exercise. Relapses are very common, and of this the patient must be notified.

Mr. Wilde does not advise the removal of the tonsils in these cases, as he does not believe that they are the cause of the deafness which may exist. He prefers the application of nitrate of silver to the fauces and mouth of the Eustachian tube.

Otitis in connection with Ophthalmia.—Strumous affections of the eye and ear may coëxist or alternate in the same patient, both diseases depending upon the same constitutional diathesis. The treatment of these cases is the same as that last detailed.

Chronic Myringitis.—Wilde's statistics give 396 cases of this form of inflammation of the ear in 2385 cases of aural disease applying for treatment; Kramer found 397 in 2000 cases; and Clark gives 42 in 140 cases.

Of Kramer's 397 cases, both ears were affected in 279, and the number of males was more than twice that of females. It does not seem often to be a sequela of acute inflammation, for while the latter occurs only in the ratio of 1 to 22 of all the cases, the former bears the ratio of 2 to 1, showing that the chronic form has no acute stage. It is, however, very frequently the sequela of exanthematous fevers, especially scarlet fever. Kramer found this to be true in one-fourth of the cases of chronic inflammation of this membrane; and Clarke found it, in 22 of 42 cases, or more than one-half.

The earliest symptom of this disease is deafness, which may not be attended with pain; or this latter may come on in paroxysms. The membrana tympani appears of various shades of red, thickened and opaque, and having scattered over the inflamed surface granulations of a pearly lustre. When the inflammation is increased by cold, the membrane becomes of a dark red color, resembling its analogue, pannus of the cornea. In the majority of cases, according to Kramer, the membrana tympani is perforated, and in such instances the Eustachian tube is always free. A morbid secretion flows from the ear of a variable character, but the meatus is generally unaffected. When left to itself, this disease lasts through life. The prognosis is unfavorable, and much more so, according to Kramer, when the hearing distance is short, even though the inflammation be removed.

In the treatment of this disease, cleanliness is of great importance, and this is accomplished by syringing the ear with tepid water. Mr. Wilde uses the nitrate of silver as a local application, avoiding its use when the membrane is inflamed. Kramer recommends a solution of acetate of lead, varying in strength from gr. i. to grs. x. to the ounce of water, to be dropped into the ear two or three times a day; and prefers this remedy to nitrate of silver, or any of the astringent minerals.

The success which attends the treatment of this disease is not very flattering. Kramer effected a perfect cure in 1-14th of the whole number of cases, and improved 11-14ths. This result, he thinks, is not to be wondered at, when it is remembered that in one-half of all the cases of chronic inflammation of the membrana tympani there was perforation of the membrane, and in one-fourth of the whole number of cases there were polypus growths.

The remaining affections of the membrana tympani treated of in this chapter, are *Morbid Deposits, Collapse, Artificial and Accidental Perforation, and Artificial Membrana Tympani.* We shall pass these sections with but a remark or two. Mr. Wilde agrees with Kramer, that

"the thickening of this membrane, unaccompanied by any other disease of the ear, invariably affords the only true indication for its perforation." Kramer's statistics present some curious facts on this subject, from which it appears, that "in chronic inflammation of the membrana tympani, the hearing is more frequently less deteriorated, when the membrane is still unperforated, than when it is perforated; and, therefore, that there is little prospect of advantage from the operation of perforating the membrana tympani. If, however, the operation should in any case be had recourse to, as large an opening as possible should be made, as it appears that the hearing was more frequently less deteriorated in cases in which the perforation was large than when it was small." (*Brit. and For. Med. Rev.*, July, 1847.) This operation is not very often practised in this country. Prof. Mutter,* has operated eight times in obstruction of the Eustachian tube, but without any benefit whatever to his patient. Dr. Mott,* whose surgical experience is entitled to the highest credibility, believes that, in simple closure of the Eustachian tube, without any other defect of the auditory apparatus, "philosophically and surgically, there is every justification for recommending and performing the operation."

The plan of restoring the hearing by plugging the aperture in the membrane tympani with cotton, first made known by Mr. Yearsley, is of such practical consequence that we shall copy Mr. Wilde's description of the method of applying it:

The cases in which it is most effectual are those where there is a very large aperture in, but not a total destruction of, the membrana tympani. It requires some tact to hit off the exact position in which to place the bit of cotton; but the moment it is done, either by the practitioner or the patient, the hearing is restored. It should be made to fit on or into the aperture in the membrane, not completely to block up the meatus, nor to press against the inner wall of the tympanum. It ought to be passed down with a fine forceps or probe, and patients should be taught how to introduce it themselves; the lady by whom I first saw it employed always carried a bodkin, a little fine wool, and a bottle of oil, for the purpose. I do not think it matters much what the fluid is; I generally use fine oil, and after the bit of cotton is saturated with it, I press it gently between the fingers. As there is always some discharge from the exposed mucous membrane in these cases, a sufficient moisture is kept up for two or three days; but the wool or cotton should be removed from time to time, according to the patient's own sensations, and never allowed to remain in longer

* A Treatise on the Anatomy, Physiology and Disease of the Human Ear. By James Bryan, M. D., Philadelphia, 1851.

than three or four days. If there be much discharge present, the wool or cotton may require removal daily. It is astonishing with what adroitness a patient will sometimes hit off the necessary position of the cotton, even after the practitioner has failed to adjust it. Notwithstanding some ingenious attempts at explanation, we still require a feasible solution as to how this remedy acts.

Mr. Toynbee has recently recommended a thin plate of vulcanized India rubber or gutta percha, attached to a wire stem, as an artificial tympanic membrane, in lieu of the wool or cotton remedy. I have no experience of it; but I doubt its general applicability.

Chapter VI. is devoted to the *Diseases of the Middle Ear and Eustachian Tube.* The first part is occupied with the anatomy of these portions of the auditory apparatus, and malformations and injuries of the tympanum. We shall have space to notice only the more important forms of disease in this division.

Acute otitis, or inflammation of the lining membrane of the cavitas tympani, occurred 69 times in 2385 cases, according to Mr. Wilde's tables; and 6 times in 140, according to Dr. Clarke's. This disease is one of the most painful affections of the ear. The pain comes on often at night, and is of the most excruciating character; in the intermission, there is a throbbing, dull aching in the ear; soreness of the side of the head, and down the neck. Acuteness of hearing at first is replaced by deafness from accumulation of mucus in the tympanum; the patient cannot inflate this cavity; the membrana tympani is of a brownish red color, but not as florid as in myringitis. The meatus, as also the Eustachian tube, becomes affected; the patient has the constitutional symptoms of acute inflammation, as fever, dry skin, furred tongue, costive bowels, restlessness, intolerance of light, and often delirium.

The disease may terminate by resolution, by rupture of the membrana tympani, and discharge of matter externally; or, lastly, and most seriously, by extension of the inflammatory process to the mastoid cells, or inwardly towards the brain.

This disease is to be diagnosticated from myringitis principally by the greater severity of all the symptoms. The treatment is the same as that of myringitis; mercury is more necessary, both to check the disease in the ear, and prevent its extension to the brain.

Subacute Otitis.—Mr. Wilde considers the otorrhœa, occurring during the progress of phthisis, as depending upon a subacute, ulcerative inflammation, which has extended to the tympanum through the Eustachian tube; the membrana tympani, having become thinned, is ruptured during a fit of coughing. Otitis occurring during an attack of exanthematous disease, is the result of an extension of the affection of the throat to the lining of the cavity of the tympanum. Mr. Wilde

shows that many of the cases of acquired muteism are the result of this complication, and very properly urges greater attention to the ear in these diseases. Scarlatina seems to be especially the cause of this unfortunate condition. Thus, according to the report of the Belgian government in 1847, of 1892 cases of acquired muteism, 216 were from scarlatina, 80 from measles, and 28 from smallpox; in this country, of 86 cases, 41 were from scarlatina.

Otitis with Inflammation of the Facial Nerve.—Paralysis of the portio dura, as the effect of otitis, is due to pressure exercised upon that nerve, in some part of its course, or to lesion of its structure. The author attributes to some form of otitis those cases of paralysis unaccompanied by otorrhœa, and remarks:

Independently of the cases of well-marked facial paralysis, such as those detailed in the foregoing section, I have frequently observed a trivial affection of the nerve in connexion with aural disease, which had evidently commenced by inflammatory action in the tympanum, or its external membrane. In such cases, if we stand directly opposite the patient, while the face is in a state of rest, there is no twisting of the mouth, nor any paralytic condition of the eyelids, but the cheek looks slightly fuller than that upon the opposite side; and the ordinary wrinkle, or curved indentation, extending from the corner of the nose to a point a little external to the commissure of the lips, is either altogether deficient, or not so well marked as that upon the opposite side; and if we engage the patient in conversation so as to bring the muscles of expression into view, all the foregoing appearances become exaggerated. I have seen many such cases, where this symptom had not been observed by the patient or his friends, or his medical attendant.

Catarrhal and Chronic Inflammation of the Middle Ear are the results of the extension of this form of disease from the throat, the symptoms of which are partial deafness, from the accumulation of mucus in the middle ear, often relieved by blowing the nose, noises in in the ear, &c. In the treatment of this disease, the author objects to the introduction of bougies through the Eustachian tube; gaseous or aëriform injections may be of service by improving the condition of the lining membrane, but in no other way.

Slight local depletion, repeated from day to day, by means of a few leeches applied on the external meatus in the early stage of the disease, the use of counter-irritation, by means of blisters, over the mastoid process, and subsequently painting that part with strong tincture of iodine; the use of astringent gargles, particularly of the preparations of alum, so long as the throat exhibits symptoms of disease, will be found most efficacious. I believe the act of gargling is in itself highly beneficial, I presume by the way in which it acts, through the muscles of the pharynx and palate, upon the Eustachian tube. The

application of a strong solution of nitrate of silver to the throat, every second or third day, considerably assists in the treatment. I am inclined to think that its action is not confined to the part to which it is applied, but that it exercises a beneficial influence upon remote portions of the same structure, even the mucous lining of the middle ear. There is generally derangement of the digestive organs accompanying these affections: the tongue is usually flabby, white, and its edge indented with the teeth; the bowels are irregular; the patient complains of acid eructations in the morning; the face is pale, the skin cold, the spirits depressed, and the patient altogether in that condition denominated "dyspeptic." This is, I presume, the form of the disease described by some writers as "stomach deafness;" and in such cases the state of the digestive organs demands attention: but if we confine our treatment to the removal of the dyspeptic symptoms, without employing such local means as I have described, we shall be allowing valuable time to pass by, and when we have exhausted an extensive range of treatment in "setting the stomach to rights," we shall find the aural disease no better than when we began. In other cases the general health appears to be unimpaired.

The general treatment, consisting chiefly of gentle alteratives and tonics, such as I have recommended in cases of subacute and strumous myringitis referred to at the commencement of this section, are equally applicable in the present case. In some females the muriated tincture of iron, given in combination with the bichloride of mercury, is more beneficial than in any other form of aural disease. I have not found the hydriodate of potash as useful in this disease as when the fibrous structures of the ear are affected. It is, upon the whole, an uncertain remedy; and although it occasionally makes what is called "a hit," it very frequently disagrees with the stomach; and, by producing iodization, it rather increases the relaxation and humidity of the mucous surface, which it is intended to benefit. In children and young persons, the iodide of iron, given in the form of syrup, is generally beneficial, and may be continued for a long time. Where aperients are required, small doses of blue-pill, the watery extract of aloes, and taraxacum, will be found a useful combination. A dry, warm atmosphere is not only most agreeable to the patient's feelings, but materially improves the condition of the ear. When the membrana tympani exhibits evidence of thickening or opacity, it should be treated with nitrate of silver, as I have already explained.

In Chapter VII., the author considers the *Diseases of the Internal Ear*, and the principal part of it is devoted to *Nervous Deafness*. The statistics of this form of deafness, according to different authors, stand thus: Kramer found in 2000 cases of disease of the ear, 1028 of nervous deafness; Wilde in 2385 found 114 cases of nervous deafness; and Clarke gives, in 140, 34 of the latter disease. This great discrepancy of authors is owing to a difference of opinion as to what constitutes nervous deafness. Dr. Kramer found in nearly all of his cases "the membrana tympani white, like paper, and opaque," a

pathological condition, according to our author, consequent upon some form of inflammation, and sufficient to account for the existing deafness. Mr. Wilde, on the contrary, considers those cases entitled to the appellation Nervous Deafness, in which no pathological condition is discoverable in the auditory apparatus. The dissections of Mr. Toynbee (*Med. Chir. Trans.*, vols. xxiv., xxv., xxvi.,) confirm the correctness of our author's views, for they exhibit, in a striking but demonstrative manner, the almost constant traces of inflammatory disease in the membrana tympani, middle and internal ear of subjects known to have suffered deafness.

Nervous deafness, according to Mr. Wilde, is more frequently hereditary than any other form of ear affection, excepting deaf-dumbness.

The subjects of it are generally of a sallow complexion, of a phlegmatic disposition, with a thin, cold skin, and languid circulation, and some are said to have a low state of sensibility of the auricles. In most cases the patients hear better when travelling in a carriage, or wherever they are exposed to a certain amount of noise attended with increased vibration; but this is occasionally observed in other forms of ear disease. The disease commences insidiously, and is often more frequently remarked by the friends than by patients themselves, who are usually most unwilling to admit the possibility of their not hearing as well as other people. Many deaf persons trace back the first accession of disease to grief, affliction, sudden mental emotion, to a shock, or to some great calamity. In many cases it first appears after childbirth; but it ordinarily comes on between twenty and thirty-five years of age. It generally commences on one side, but sooner or later extends to both ears, although the patient almost always hears better on one side than the other. It is strange, but nevertheless true, that in general the musical ear remains unaffected; persons will play in perfect time who can scarcely converse. In nervous deafness, especially in females, the patients invariably hear worse on being in any way excited, as by suddenly seeing a stranger undergoing a medical examination, &c. I think males hear rather better after dinner. Both suffer much from depressing emotions. Tinnitus aurium, so common an attending symptom on every form of aural and many cerebral diseases, is a frequent but not an invariable companion of nervous deafness. It may exist at the commencement of the disease, and be lost in after life; but, except under excitement—and in the majority of such cases I believe the disease is cerebral—it seldom supervenes.

The treatment of this disease should be according to the cause. Mr. Wilde has no faith in the injection of acetous ether into the cavitas tympani, as recommended by Dr. Kramer, or indeed in any topical application whatever. Counter irritation behind the ear, the judicious use of mercurials long continued, and the improvement of the gene-

ral health of the patient, are the means best calculated to effect favorable results.

The concluding chapter is upon *Otorrhœa.* This symptom of disease of the ear comes more frequently under the treatment of the practitioner than any other aural affection. Mr. Wilde met with it once in every three and a half cases. We need not here review the causes of this affection; it is but the sequela, for the most part, of some one of the forms of disease already described. The author, however, gives a very complete and practical history of the disease, and its treatment. We have space only for the following upon its treatment:

In simple external otorrhœa, I generally paint the surface engaged with a solution of nitrate of silver, ten grains to the ounce, with a fine camel's hair pencil, or a bit of cotton on the end of a probe, which I find far preferable to the old practice of dropping in the solution; as, by thus rubbing it on the parts, some more and some less, according to their condition, it removes a quantity of the mucous discharge, which adheres with great tenacity, and thereby makes its effect more certain; it may also be required on some particular spots only; and moreover, by this method, the concha, external parts, and the dress, are not blackened by it. This application should be repeated every second day, and, in the interim, the ear should be syringed night and morning, and even oftener, if the discharge accumulates, with plain tepid water, from a gum elastic bag, which, when used by friends or attendants, or the patient, is much preferable to the usual piston syringe; and at night a slightly astringent lotion may be poured into the ear till it fills up the meatus, allowed to remain there for a few minutes, with the head bent to the opposite side, and then permitted to run out. The syringing must not, however, be overdone: as soon as the discharge begins to moderate, it should be had recourse to less frequently; for if not, it will, particularly in the hands of attendants, serve to keep up the irritation.

The various salts which enter into the general composition of eye collyria are here particularly applicable, especially those of alum, lead, zinc and copper. I formerly employed the lead lotion very extensively, but I have found that it frequently, without coming in contact with diseased bone, produces a blackened discharge: when it is used, the liquor plumbi will be found the safest and most efficacious preparation; and the lotion may be preserved clear, and either rose or elder-flower water employed, by the addition of a few drops of acetic acid. The liquor aluminis composition of the London Pharmacopœia is that which I now most frequently prescribe. Solutions of tannin will also be found most useful astringents.

If upon examination we find the meatus thickened, and it and the surface of the membrana tympani pink and vascular, a leech or two, according to the age and strength of the patient, should be applied every third day, several times. When the discharge is fetid, a chlo-

ride of lime lotion used occasionally is of service, being slightly astringent, and correcting the disagreeable smell.

With regard to cleanliness and syringing, so very much depends upon it, particularly among the lower orders, that the surgeon never can sufficiently impress its importance upon the patient or the attendants. In simple mucous discharge without polypus, granulations, or affections of the deep-seated structures, it is the chief part of the treatment; and yet how difficult to have it performed regularly! Allowing the discharge to accumulate is undoubtedly one of the principal means of perpetuating otorrhœa in any of its forms. When the meatus becomes a secreting cavity, with ulceration of its walls, it resembles a fistula, and the longer it has existed the more difficult it is to heal; and this fistulous character, especially in a narrow passage, promotes the continuance of a slight thin discharge, even long after the granulations or other producing causes have been removed. The action of the external air, therefore, upon this secreting surface, similar to what it experienced in health, can never be too much observed. There is, however, a very general prejudice to the contrary; for in two-thirds of the cases of otorrhœa which I am called on to treat, I find the orifice of the meatus filled full of cotton or black wool, which, if treatment be employed, is invariably restored to its position after each syringing. Some time ago I was consulted on account of a discharge from the ears of Master C.; it was then of two years' standing, and was thin and whey-like. He had been under medical treatment during the entire course of the disease; generally made use of syringing, and an astringent wash; never ceased to take tonic mixtures and aperient powders, and had resided twice at the sea-side. On examination, I found the auditory passages converted into secreting cavities, but without fungi, granulations, or caries, and with the tympanal membranes still perfect, but I learned that he had worn plugs of cotton in his ears ever since the discharge commenced; and these were only removed once in every two days in order to syringe and apply the lotion! By throwing aside the plugs, syringing twice a day, and continuing the same astringent applications, the child was cured in a month. It is scarcely necessary to add, that the moment the ear-passage becomes a muco-secreting surface, all traces of cerumen vanish, and it is not in the generality of cases until months after the discharge has ceased that the wax reappears.

With regard to general treatment, a very remarkable difference seems to exist in this country in relation to the management of the diseases of the eye and the ear; that of the former being of too local a nature, while that of the latter is almost exclusively constitutional. How frequently do we see a case of pustular or rheumatic ophthalmia, with a foul, white, loaded tongue, treated by a caustic solution dropped into the eye, or an astringent lotion applied to the eyelids—while a case of otorrhœa, without any derangement of the digestive functions or general health, is recommended tonics, sea-bathing, blistering, and an issue in the arm. If the case is curable,—for it must be borne in mind that only a certain number of those presenting with discharge from the ear are amenable to treatment,—and that we

have fully ascertained the cause and source of the otorrhœa, and have reason to believe, from the appearance of the patient or the history of the case, that the state of constitutional health assists to keep up the local disease, we should by every means endeavor to act on the system. Cod-liver oil, and Peruvian bark are the remedies which I have found most conducive to this end: the former as an anti-strumous fattener; the latter by altering the established tendency to morbid secretion; but notwithstanding that otorrhœa of long standing is reputed to be entirely a constitutional affection, I have seldom occasion to prescribe any course of alterative medicine, unless in cases of marked strumous habit, and when the glands of the neck are diseased. With regard to "drains" and counter-irritation, we may insert an issue in the arm, if only to meet the prejudices of the friends or medical attendants; but sometimes cases occur that of themselves not only warrant but demand such a precaution; for instance, where disease of the brain had appeared in other members of the family, or that the aural discharge had broke out on the subsidence of disease of the skin or any vicarious outlet, or that the child had had convulsions in infancy, etc.; but these are the exceptions to the rule.

Towards the close of an otorrhœa from simple chronic otitis, especially in children, I have frequently remarked, that they are liable to fresh attacks of otalgia, and sometimes small abscesses form round the mouth of the meatus. These are, I believe, best warded off by the application of a vesicating liniment behind the ears, and keeping up gentle counter-irritation for some little time after the otorrhœa has ceased. For this purpose the croton oil dissolved in soap liniment, or the tincture of iodine, made stronger and more soluble by the addition of a little hydriodate of potash or the acetum lyttæ, answers very well.

Among the complications of otorrhœa are polypus growths, caries of the bony case of the ear, facial paralysis, and cerebral affections, all of which are individually examined by the author.

Mr. Wilde very appropriately devotes the concluding portion of his volume to the subject of deaf-muteism, and gives a very complete account of the past and present condition of the unfortunate subjects of deaf-dumbness.

We have now completed the examination of this interesting work, and trust that, from our explanations and quotations, the reader will form a not incorrect estimate of its literary and practical character. We are satisfied that it is eminently suited to the wants of the general practitioner in this country, where diseases of the ear have been so little investigated, and where a work of this completeness is not soon to be written on aural surgery. Its republication is therefore timely, and we cordially recommend it to the attention of the profession.

In the preceding pages we have purposely occupied the space allotted us with the work of Mr. Wilde, not because of its superiority, as a literary performance, to the work with which it stands associated, but solely from the greater interest which attaches to the subject. We cannot therefore dwell upon the treatise of Mr. Walton with that minuteness which we could otherwise wish, and shall be able to give little more than an outline of the work.

We agree with the editor, Dr. Littell, that there was need of a treatise on operative ophthalmic surgery, written in the light of modern science. Of the author's capacity to perform the task, if we had no other evidence, the work itself affords the best and most satisfactory proof. As the pupil of Tyrrel, Scott, and Dalrymple, and as surgeon to an extensive ophthalmic hospital, however, Mr. Walton seems peculiarly qualified to furnish a work on ophthalmic surgery, scientifically and practically written, in the light of modern science.

The following are the subjects treated of in the several chapters: I. The Use of Chloroform in Ophthalmic Surgery. II. Ophthalmic Instruments in general. III. Injuries from Mechanical or Chemical Agents. IV. Foreign Bodies on the Surface of the Eye; Larvæ of Insects under the Lids; Foreign Bodies within the Eyeball; Ossification of the Ocular Tissues. V. Affections of the Eyelids; Diseases of the Lachrymal Passages. VI. Affections of the Puncta; the Canaliculi, and the Lachrymal Tube. VII. Caries of the Orbit. VIII. Nævi Materni; Dilated and Tortuous Veins; Aneurism by Anastamosis. IX. Incisions of the Conjunctiva in Chemosis. X. Strabismus or Squint. XI. Tumors. XII. Protrusion of the Eyeball. XIII. Staphyloma. XIV. Conical Cornea. XV. Removal of Opacities of the Cornea by Operation; Transplantation of the Cornea. XVI. Cataract. XVII. Entozoa within the Eyeball; Cysts within the Chambers of the Eyeball. XVIII. Artificial Eyes. XIX. Malignant Affections of the Eye. XX. Artificial Pupil. XXI. Extirpation of the Eyeball.

With this enumeration of the subjects considered, and the assurance that each one is thoroughly discussed and illustrated by clinical cases, and, when requiring it, well executed wood-cuts, we must conclude our short, and necessarily imperfect notice of Mr. Walton's excellent volume.

BIBLIOGRAPHICAL NOTICES.

ART. XII.—*Lectures on Surgical Pathology, delivered at the Royal College of Surgeons of England.* By JAMES PAGET, F. R. S., lately Professor of Anatomy and Surgery to the College; Assistant Surgeon and Lecturer on Physiology at St. Bartholomew's Hospital, London, 1853. 2 vol. 8 vo, pp. 499 and 637. Philadelphia: Lindsay & Blakiston, 1854, pp. 699.

THESE Lectures are a rich contribution to the present advanced stage of Pathological Science, and they hold the same important and highly practical relations to the knowledge and treatment of disease as were held by the great work of the immortal HUNTER *on the Blood, Inflammation, and Gunshot Wounds.* Like Hunter, Mr. Paget is a close student of Nature, an accurate observer, a lucid and candid writer, and a true philosopher. These Lectures were delivered at the Royal College of Surgeons, during the six years from 1847 to 1853; and the author informs us that the plan and the subjects of the Lectures were based upon his studies in the Pathological Museum of the College, that monument to the genius and industry of Hunter. He remarks that "the first portion of the Museum, devoted to the illustration of general pathology, seemed to offer the best plan by which the knowledge acquired by a long study of the whole collection might be communicated.

"The modes were many in which such a subject might be treated in Lectures; but as circumstances had decided the subject, it seemed well to let them determine, also, the method, and to adopt that which was most natural to one engaged in the simultaneous practice of surgery and teaching of physiology. Thus guided, I designed to give Lectures which might illustrate the general pathology of the principal surgical diseases, in conformity with the larger and more exact doctrines of physiology; and the plan seemed the more reasonable, because it was the constant design of the great founder of the Museum.

"The Museum limited while it indicated the subjects of the Lectures. They were, therefore, not constructed to form a system of surgical pathology."

The following are the pathological studies included in these Lectures:—*Hypertrophy, Atrophy, Repair, Inflammation, Specific Diseases, Tumors, Tubercle.*

Upon each of these subjects our author has brought to bear all the light reflected from the vast pathological collections and cabinet of facts which he has enjoyed such peculiar facilities for studying, while he has carefully availed himself of the knowledge hitherto attained by his coadjutors in the great field of pathological investigation. In such labor, Mr. Paget displays many rare excellencies, by which many of his learned cotemporaries should profit. He is very careful and judicious in his selection and statement of the facts from which principles are to be deduced; whenever there are doubts or conflicting opinions, he

scrupulously gives them the fairest statement; he attentively interrogates Nature, and unveils the simplicity of her processes; and finally, though he is preëminently learned in microscopy and all the modern advancements in science, he does not allow his mind to be dazzled or misled by the gorgeous light with which they have irradiated the whole field of our knowledge of Nature and disease; but he attempts so to focalize this light as to put every doubtful point to the severest test of which it is susceptible from such agencies, thus relieving many questions of much doubt, or settling them finally, so far as these means of investigation are concerned. Like all truly learned men, Mr. Paget has no love of high-sounding or new names, but he writes in a pure and lucid style; and, with a profusion of clearly-stated and apposite facts and illustrations, he labors to throw a flood of light upon every subject which he discusses.

As these Lectures, now republished in this country, should be read by every member of the profession, we will not attempt an extended analysis of them.

ART. XIII.—*An Account of the Origin and Progress of the Epidemiological Society, and the Address of its President.* London. 8vo pamphlet.

THIS small pamphlet we have read with equal surprise and gratification. It is probably known to most of our readers that a society has been established in London, under the auspices of a number of distinguished men, both professional and laymen, for the purpose of investigating the causes, the habitudes, the period of incubation, the contagiousness, the methods of treatment and cure, the prophylaxis, and all other points of interest, relating to *epidemic diseases*. In this term are not only included those most popularly known as epidemics, such as yellow-fever, typhus fever, cholera, &c., but all others which may in any way be regarded as general in their origin or progress, such as smallpox, scarlatina, diarrhœa, dysentery, hooping cough, &c., &c.

The investigation of these important subjects has heretofore been left almost exclusively to unaided individual effort, and hence the failure, as is believed in too many instances, to discover the general laws by which a great number of these zymotic maladies are governed. The good influence of such an *associated effort* for the investigation of these important matters may be seen almost at a glance. It is, perhaps, simply for want of such an effort, that the medical profession is so greatly divided in opinion, and hence is so feeble in its influence upon governments and legislators, in questions which so nearly and dearly affect the best interests of humanity. There are certain investigations which can best be left to the care and study of isolated individuals, such as mathematics, logic, ethics, &c., but there are many others which can only be thoroughly investigated by associated effort, such as geology, which depends for accuracy upon the observations made by different investigators in different parts of the world, from which

the *truth* can only be determined by a comparison of results. So also is it with astronomy, which requires the observation of several individuals not only in different places, but in different years, and even different centuries, to determine its laws with precision.

"In the science of medicine," says the learned president of the society, B. Guy Babington, M.D., "the two methods are pretty equally blended; for so varied are the facts on which it is founded, so infinitely modified by a thousand different circumstances, that it requires the combined efforts of many to amass a sufficient stock of information to enable us to discriminate that which is essential from that which is accidental, and thus to arrive at trustworthy results. So far indeed as medicine partakes of the nature of exact science, that is to say, in its chemical, its anatomical, its microscopical, its pathological elements, it may be studied and advanced by individual efforts, and new truths may be worked out in the retirement of the study or the laboratory. But where it is only conjectural, and not reducible to exact rule and precise results; where, from the imperfection or complication of our data, we must have recourse to the probable instead of the certain; where we must balance chances, estimate averages, and strive to reconcile conflicting evidence,—there must we act in combination for the attainment of our object, since the experience of no individual is adequate to furnish a sufficiently broad basis on which to establish a general law."

The highest earthly interests of humanity are involved in these questions, and it is no less the duty of the general public than of our profession that the objects contemplated by this society should be fostered and encouraged in every possible way; and it appears that in London this aspect of the question is recognized, and to some extent appreciated, if we may judge from the fact that the society embraces among its supporters and laborers many lay individuals. Would not such an association among us be productive of great and happy results? A Hygienic Society here, which would examine all those matters which affect the health and lives of human beings in this city alone, would find work enough for considerable numbers, and by the result of its labors, obtain an influence in the proper regulation of health measures, and the enactment of sanatary laws, which would be of incalculable benefit to the commercial prosperity of the city, and the happiness and comfort of every inhabitant. J. H. G.

ART. XIV.—*A Practical Treatise on the Diseases of Children.* By J. FORSYTH MEIGS, M. D., Lecturer on the Practice of Medicine in the Philadelphia Medical Association, etc., etc. Second edition, revised and enlarged. Philadelphia: Lindsay and Blakiston. 1853. 8vo, pp. 711.

The first edition of this work constituted one of the series of the "Medical Practitioners' and Students' Library." The present edition has received many valuable additions, which, we are confident, will add to its deserved popularity with the profession, as a practical work on the diseases of children.

ART. XV.—*Hallucinations; or, the Rational History of Apparitions, Visions, Dreams, Ecstasy, Magnetism, and Somnambulism.* By A. BRIERRE DE BOISMONT, Docteur en Médecine de la Faculté de Paris; Directeur d'un établissement d'Alienes, etc., etc. First American from the Second Enlarged and Improved Paris Edition. Philadelphia: Lindsay & Blakiston, 1853. 8vo, pp. 553.

To those who sympathize "with the grand creed of supernaturalism" this will prove an interesting volume. As a philosophical treatise on mental pathology, however, it possesses but little to commend itself to our perusal.

ART. XVI.—*A Treatise on the Venereal Disease.* By JOHN HUNTER, F. R. S. With copious additions, by Dr. PHILIP RICORD, Surgeon to the Hôpital du Midi, Paris, etc. Edited, with notes, by FREEMAN J. BUMSTEAD, M.D., Physician to the Northwestern Dispensary, New-York. 8vo. pp. 520. Philadelphia: Blanchard & Lea. 1853.

THE original treatise of John Hunter, *on the Venereal Disease*, published in 1786, has considerably enlarged by the addition of notes and emendations of successive generations of editors. Nor does this growth seem to have been unhealthy. From a somewhat attentive examination of the volume, we find little to which judicious criticism would take exception. It is fitting that the investigations of Hunter, which removed the rubbish and laid the foundations of a rational and scientific syphilography, should form the basis of a work on the venereal disease. And it is no less proper that the researches of Ricord, who has reared upon the foundation thus laid the majestic superstructure of a rational syphilitic pathology and therapeutics, should be added as a commentary on the text of his great predecessor. To the present edition we have superadded the notes of the English editors, Home and Babington, and the American editor, Dr. Bumstead; the former being essential to the illustration of the views of Hunter, and the latter to bring the practical portions of the work down to the present period.

We regard, therefore, the publication of this work in its present form, embracing as it does the views of the two most successful students in this speciality—one writing at an early, the other at a later day, but both pursuing the subject in the same inductive method—as timely and appropriate, when so much attention is being given to this department of medicine.

PART THIRD.

FOREIGN MEDICAL RETROSPECT.

PRACTICAL MEDICINE.

Of Acute Peritonitis and its Diagnosis in Infants at the Breast. By Dr. ISIDORE HENRIETTE, Physician to the Foundling Hospital of Brussels. [*Jour. de Med. de Bruxelles.*]—The great frequency of affections of the system of serous membranes in infants at the breast, is a subject worthy of the deepest consideration of those who devote special attention to the study and treatment of the diseases of children. The peritoneum, the pericardium, the pleura, the meninges, far more frequently than is believed, present pathological alterations which prove the peculiar tendency of these exhalent organs to become effected in children of early years. With the exception of meningitis, the symptomatologic manifestations of which are usually striking, these diseases are diagnosed with difficulty. We do not mean to say that pleurisy, pericarditis, and inflammation of the peritoneum can only be recognized after death, but that the functional disturbances which they create are frequently so slight as to require on the part of the physician the greatest attention.

We shall attempt to extricate the latter disease from the obscurities which surround it, by coördinating the elements of its diagnosis which have been furnished by authors, and describing what we have observed ourselves. We shall establish, finally, its differential diagnosis from entro-colitis, a frequent disease of infancy which may be readily confounded with peritonitis.

In the first place, if we seek for the cause of idiopathic peritonitis in young children we are quickly at a loss. Its sudden development is not the least strange peculiarity of this affection. We know that in the adult spontaneous peritonitis is rarely observed, and that it is ordinarily encountered only in those peculiar conditions which are produced by the puerperal state, by traumatic lesions, and by perforations of the digestive tube. Its etiology, then, is most uncertain. In the two cases which have occurred in our service, without having recourse to suppositions and hypotheses, no cause could be inferred; it is important to mention that there was nothing abnormal in the umbilical cicatrix.

In the adult, the symptoms of peritonitis are well marked: it is difficult to mistake them; the symptomatology is so plain, that without a want of experience that can only be admitted in young persons upon their entrance upon the profession, it is impossible to avoid a rigorous diagnosis.

Is it so in infants? No. Here we are destitute of the information afforded by the patient; here the disease is not reflected, as in the adult, by the contracted face, the small, corded, peritoneal pulse. Pain upon pressure exists, indeed, and meteorism; but these two morbid manifestations occur also in affections of the intestinal tube, and yet in a great measure the diagnosis must be based upon them. It is therefore well to define accurately their conditions, their intensity and progress in peritonitis of young infants, as distinguished from entero-colitis.

The onset of peritonitis in infants is rapid; we cannot say whether it is preceded by shivering, as in adults, but we can assert that it is not announced by any prodromes. The patients that we have observed, enjoyed a satisfactory state of health until the very onset of the peritonitis. As far as we could perceive, until then they presented no unusual symptom.

Entero-colitis commences less suddenly; at first the child refuses the breast, or suckles with indifference for two or three days before the attack; then borborygmus occurs, and the evacuations soon manifest derangement.

In Peritonitis.	*In Entero-colitis.*
The abdominal sensibility is greater than in any disease of the abdominal organs; the child cries upon the slightest pressure.	The abdominal sensibility is less acute; slight pressure does not cause the child to complain.
Meteorism occurs with the greatest rapidity. At the very commencement of peritonitis the abdomen becomes tympanitic almost while we are looking at it, while, at the same time, dullness is established over the inferior or pubic region.	Meteorism occurs less rapidly and always bears a relation to the intensity of the abdominal lesion.
Vomiting is rare, and usually occurs only at the outset; the matters ejected are unmixed, very green, and stain a linen cloth.	Vomiting is frequent; the matters ejected are almost always mixed, and of a yellowish green color.
Constipation was a marked symptom in the two cases we observed.	Diarrhœa is an almost constant phenomenon.
The countenance is little changed; the eyes are more fixed than usual, perhaps; the plumpness of form is unaltered.	The countenance is rapidly altered; the eyes and mouth are surrounded by bluish rings: emaciation is rapid.
The child is motionless, and cries when it is moved.	The child frequently flexes its limbs upon the abdomen.
The respiration is entirely thoracic, and is greatly accelerated; the inspirations are short and incomplete.	The same symptoms occur but much less strikingly. The diaphragm does not remain motionless and passive as in peritonitis.

Such are the most striking symptoms which we have observed. They differ in some respects, particularly in regard to the appearance of vomited matters and of the countenance, from those described by Billard, almost the only physician who has carefully studied peritonitis, in children at the breast, or given a description of it at all complete. This is astonishing, for, since this author wrote, infantile pathology has been very extensively explored, and several masterly treatises have been devoted to it. In these, however, this redoubtable affection receives only a passing notice. Some persons may complain of our omission of the signs of peritonitis furnished by the general symptoms, and particularly by the pulse. We have not mentioned them because they are identical with those observed in other febrile affections.

Case I.—*Acute peritonitis; death.*—A male child, forty-two days old, entered the hospital on the 25th of May, 1850. The lower limbs were covered by a papulous syphilitic eruption; a sero-purulent, sometimes sanguinolent, discharge oozed from its nostrils. In consequence of the obstruction of the nose, respiration was laborious and lactation difficult.

The child was placed upon mercurial preparations, and confided to a healthy nurse, and soon became fat and hearty. Towards the end of June the eruptions had disappeared, but the ozæna was not cured. The nurse, having conceived a great affection for the child, consented to take the bichloride of mercury in order to cure it. The results of this treatment were soon manifested; the child improved most rapidly.

On November 8th, the child became obstinate all at once, uttered cries, refused to take the breast; the face was flushed, the eyes fixed; vomiting of bilious matter occurred. The abdomen became enormously distended; it was hot; it could not be touched without causing the child to cry and to shed tears. Constipation; hurried thoracic respiration; high fever. (*Two leeches near the umbilicus, emollient cataplasms; laxative enema; diet.*)

The child cried all night, lying motionless in its crib.

On the 9th, more vomiting; one consistent dejection. The abdomen was very tense and painful. (*Protracted warm bath; four leeches to abdomen; emollients.*)

The child died in the course of the day.

Autopsy 24 hours after death. No emaciation. The peritoneal cavity was filled with a flocculent sero-purulent liquid; there were various intestinal adhesions. The peritoneum was highly injected; there was little or no redness of the intestines, the mucous membrane was healthy; the liver was covered by a purulent layer; the intestines were greatly distended by gas. No other organs presented the slightest alteration, except the nasal bones, which were thickened from periostitis. The umbilical cicatrix was complete, and without redness.

Case II.—*Acute peritonitis: death.*—A new-born child was brought to the hospital, Nov. 17, 1852. It was a female, very small and feeble. The eyes were invaded by a grave purulent ophthalmia.

It was put under treatment for this affection, and for a stomatitis (muguet) which supervened shortly after, and, at the commencement of January, all of its functions were well performed, it had gained flesh, and would have left the hospital but for the inclemency of the season.

On the 14th of January, the child became cross, and cried when it was moved, and showed no inclination to nurse. The left lower extremity was œdematous, and was covered by erysipelatous patches. (*Hygienic precautions.*)

Jan. 16th. The erysipelas disappeared from the left limb, but invaded the opposite limb.

Jan. 18th. The inflammation abandoned the inferior extremities, and attacked the left side of the trunk and the lower part of the arm. In the evening there was bilious vomiting.

Jan. 19th. The abdomen became enormously distended; the child no longer vomited; the belly was hot, and excessively painful. The slightest touch made the little patient cry. There was dullness at the inferior portion of the abdomen, but fluctuation could not be perceived; the face was flushed, the eyes fixed, the inferior extremities motionless, the respiration incomplete, thoracic; one consistent dejection; fever. The erysipelas was still manifest on the arm. (*Four leeches to the abdomen; emollients; laxatives; diet.*)

The child died in the afternoon.

Autopsy.—Liver enormous, fatty, yellow. Sero-purulent liquid in peritoneal cavity; recent false membranes and adhesions of the intestines; a slight amount of purulent serosity in the left pleural cavity. The lungs, spleen, and intestines presented no pathological alteration.

The cellular tissue of the left leg and arm were infiltrated by serum. There was nothing abnormal in the articulations.

Is this case the peritonitis was discovered during life. The case which preceded it had taught us a useful lesson.

We shall say nothing of the treatment of this disease, except that it is our intention, having derived so little benefit from antiphlogistics and emollients, to combine the mercurial preparations with these, when the occasion presents itself.

We are not, however, very sanguine as to the eventual result of this combined treatment, for death arrives so promptly in this disease, that we can hardly believe that constitutional therapeutical agents can have time to act.

Case III.—*Acute peritonitis; volvulus; death.*—Since we recorded the preceding observations, we have met with a third case of peritonitis in a newborn child, complicated with volvulus. This is its history:—

A female child, born at the Maternity, was brought to the hospice on the 22d of March, 1853, the seventh day after its birth. It was a large infant, of good constitution. Its body was covered by psoriasis guttata. Suspecting a specific cause, although we could not detect the opaline border which Biett regards as the pathognomonic sign of the

venereal affection, we confided the child to a nurse who was already taking mercurial preparations for the cure of a syphilitic child whom she was nursing.

Until the sixth day after her admission, we observed nothing in the little patient; she nursed well, slept well, her functions were well performed, the eruption did not progress; but, on the 28th, we found a radical and menacing change in her situation.

The abdomen was tense; there was considerable meteorism, exquisite sensibility, dullness above the pubes, short and hurried respiration; the countenance was anxious; the eyes were fixed; the limbs were motionless; the child cried when was she moved; she had not urinated since the preceding evening; no vomiting; constipation; feverish pulse; cold extremities; the eruption had faded.

The catheter was passed, but it did not evacuate a single drop of urine. The child was placed in a hot bath, with the hope of bringing back the eruption; the abdomen was fomented, emollient injections were administered, and a table-spoonful of the syrup of manna.

In the afternoon of the 28th, the patient vomited yellowish matters resembling fæces to the eye, but inodorous. The psoriasis had completely disappeared. The little patient was expiring.

A catheter introduced into the bladder and also into the rectum brought away neither urine nor fæces. The diagnosis had been written over the patient's cradle:—Acute peritonitis and volvulus.

The child died, then, on the day upon which the disease commenced.

Autopsy.—Several of our colleagues and resident students of St. John's Hospital were present at the post-mortem examination.

The bladder was contracted, it contained not a drop of urine; the peritoneum was highly injected, and contained a turbid flocculent serum; the intestines were glued together by a grayish, semi-liquid substance; the small bowels were strangulated by bands of lymph; the ileum was invaginated; the rectum was empty, whilst the portion of intestine above the obstacle was filled with yellowish liquid. The convex surface of the liver was covered by false membranes; the spleen was enlarged. The lungs, kidneys, encephalon, heart, and other organs were normal.

This observation is interesting in several particulars. It confirms, in the first place, the description we have already given of the symptoms and progress of this disease; and it was accompanied by a phenomenon which is not mentioned by any of the physicians who have written upon the diseases of infancy, a complete suppression of the urinary secretion. As to the causes of this symptom, we can only speculate upon them. There is another important question in connection with this case. Can it be regarded as an example of spontaneous, idiopathic peritonitis? Many physicians deny such a disease altogether, but a careful examination of the above case seems to demonstrate its existence. In fact, the first symptom which appeared was the rapid distension of the abdomen, accompanied by the ordinary symptoms of peritonitis in children, with dullness above the pubes, whilst the psoria-

sis still preserved all its distinctiveness, and showed no tendency to disappear. A metastasis could have been inferred if the abdominal symptoms had followed the disappearance of the cutaneous eruption, but this was not the case.

We shall conclude these brief and incomplete remarks by insisting upon a capital fact, which we noticed in each of our three patients: the rapidity with which effusion and the organization of false membranes occurred. As soon as pain and meteorism were discovered, percussion indicated that effusion and purulent agglutination had also taken place. We have not spoken of fluctuation, because we were unwilling to resort to the manœuvres necessary to detect it, in consequence of the extreme pain which they would produce.—*Virginia Med. and Surg. Jour.*

On the Application of Tincture of Iodine as an Ectrotic Remedy in Smallpox. By J. Crawford, M. D., Professor of Clinical Medicine in McGill College, Montreal.—It is now upwards of nine years since I first recommended the application of tincture of iodine as an ectrotic remedy in smallpox, and although I observe that the suggestion has been noticed by Dr. Copland, in his Dictionary of Medicine, and by Dr. Dunglison, in his work on Therapeutics, and also by some others in the United States, I would nevertheless desire again to draw the attention of the medical profession to the benefit tha a more extended experience has convinced me would follow a general application of the remedy.

Epidemics of the dangerous malady of smallpox have been fortunately rare amongst us, and therefore the opportunity of further testing this remedy had not been afforded me, till the latter end of the last year, and earlier months of the present, during which period I have had occasion to treat, both in hospital and private practice, several cases of very grave variolous disease, and would desire to lay my further experience before the profession, anxious that a fair trial and just estimate of the application should be made, while I feel fully confident that it will maintain the reputation I have deemed it deserving of. I would here appeal to those who have seen much of the natural smallpox, or its effects, how few cases escape pitting and unseemly scars, when the disease is allowed to run its course without interference, and I would also ask, how many attempts have been made in consequence, to supply an ectrotic remedy, and how difficult of application, or disagreeable, and even inefficacious, are any that have been hitherto recommended. The Herculean undertaking of cauterizing the several individual pustules, in severe cases, quite precludes its application. I have reason to think the compound tincture of iodine a very powerful and efficacious remedy, which has been tried with very satisfactory results in the Montreal General Hospital by my friend Dr. Campbell, but from my being under the impression that the addition of the hydriodate of potass caused more pain, I have not employed this form. The disagreeable mercurial mask, the inefficacious cov-

ering of gold-leaf, cotton, or collodion, are now in a great measure laid aside. I stated formerly, on the occasion of my first suggestion of this application in the Medical Gazette published in this city in 1844, that I was led to try it in smallpox, from the very marked benefit I had derived from its use in erysipelas, and various other cutaneous diseases, for several years previously. I was then satisfied of its *antiphlogistic* powers and *soothing* effects, and trusted that a more general employment of it in variola would establish its claims to general confidence.

During the late epidemic of variola, I have had several opportunities of trying its powers, and my cases have been observed by many members of the profession, to whom the issue has afforded every satisfaction. I have reason also to know that several medical practitioners have followed my example with success, while others have made only a very *imperfect* and *insufficient occasional* application, which neither could afford a satisfactory result, nor determine the advantages derivable from it. I have been favored with the opinion of several physicians of this city, of the highest standing in the profession, on the advantage of using this remedy, which I subjoin. The application I have used is a saturated solution of iodine in spirit of wine, *which is to be brushed freely over the face once or twice daily, from the earliest day of the eruption that is practicable, and continuing the repetition of the application daily, or oftener, during the period of the maturation of the pustules. The earlier the application is commenced, the more efficacious it proves. The inflammatory and ulcerative processes are controlled, and the intolerable itching relieved*, by which means *scratching*, and its evil consequences, are obviated. For some time I was disposed to confine the application to the face, as being the part most disposed to ulceration and pitting, as well as that most desirable to be preserved from marks. I have, however, on many occasions applied it to various other parts, for the sake of experiment, or contrast, and also to relieve the intolerable pruritus, and have even extended it over nearly the whole body, at the patient's desire, without any evil consequence or inconvenience from the most extended application. The relief it affords to the itching (if it conferred no other boon) would of itself be a sufficient recommendation of the application. Its antiphlogistic and febrifuge properties, however, are very manifest, and I have no doubt *modify* and *moderate* the *fever*, and thereby operate in a most salutary manner. The medical treatment I have combined with it is so simple and mild, that a great deal cannot be attributed to it; being merely small doses of calomel and Dover's powder occasionally, during the day, and, at night, as a sedative. When pits are left, I have observed that they principally occur in the nose, and I am inclined to think that this may in some degree be owing to the insufficiency of the application to this sensitive part, or from the disagreeable vapor causing irritation of the schneiderian membrane, or eyes, which makes the patient more desirous to escape from its application; but even this inconvenience may be easily obviated by keeping the eyes shut, and, if requisite, stopping the nostrils.

The immediate effect of the application is pain, which is more complained of by some than by others. It speedily subsides, and gradually abates in severity, after the first few applications; and the relief to the itching it affords is so gratifying to the patient, and the effects so manifest to the friends, that they always remark the contrast of the parts "painted," with those left "unpainted;" and frequently request a further extension of the application.—*Montreal Med. Chron.*

On the Local Application of the Vapor of Chloroform.—In an article in the *Dublin Quarterly Journal*, Dr. Hardy gives several examples of the application of the vapor of chloroform to the vagina and neck of the uterus, in painful affections of these parts, by means of an instrument which he has invented for that purpose. The following are his conclusions:—

"In observing the effects of chloroform as applied locally in the form of vapor in the above cases, I have endeavored to obtain as correct a notion of it as possible, in order that a true estimate might be arrived at of its value as a remedy. Besides the cases here recorded, I have applied the vapor locally in various other forms of irritation. One of these in particular I was anxious to know its action in—namely, *pruritus pudendi*, a disease exceedingly troublesome and unpleasant to the patient, and for the relief of which she is often very reluctant to ask a remedy until forced to do so. I have used it in a case of this kind in the person of a very intelligent patient, who for a length of time had been annoyed, particularly on the approach of a menstrual period, by this distressing complaint, for which she had made use of various remedies. The vapor of chloroform, she informed me, afforded her relief from her uneasy sensations. On referring to one of the cases (Case v.) detailed, it will be seen that there was a very severe sense of scalding in the vagina, which seemed to depend a good deal on uterine irritation. Knowing the heat caused by the vapor of chloroform, I feared this patient should have suffered severely from its application; but, on the contrary, she was quite relieved of it; so in *pruritus pudendi*, arising from a similar cause, the like results have been obtained as in her case.

"If future investigation as to the effect of the vapor of chloroform when locally applied coincide with the results already observed in the series of cases herein detailed, it seems reasonable that the following conclusions be considered deducible:—

"First. That in many forms of disease attended with pain or irritation the local application of the vapor of chloroform will frequently act as quickly in affording immunity from suffering as though inhaled in the usual manner.

"Secondly. That the vapor locally applied is not attended with any unpleasant affects (save the sensation of more or less heat) either at the time or subsequently, and is therefore eligible under circumstances contra-indicating its use by inhalation.

"Thirdly. That as a remedy, its local application is preferable to the

use of opium and most narcotics in spasmodic and painful affections, particularly of the uterine system, owing, first, to its freedom from causing derangement of the digestive organs, and secondly, to its greater rapidity of action."

On Chronic Excoriations of the Tongue of Children. By Frederic Betz. (*Dub. Quart. Jour.*)—Professor Möller, of Königsberg, describes a chronic desquamative process of the tongue, which he had observed in six cases.* The patients were middle-aged females. The excoriations appeared in the form of irregular deep red spots, for the most part sharply circumscribed, either altogether stripped of epithelium or very thin over them, while the hyperemic and swollen papillæ projected somewhat beyond the level of the surrounding parts. No morbid secretion could be observed on these spots, nor did any deep ulceration take place. They existed chiefly on the borders and tip of the tongue, more frequently on their under surface, and on the inside of the lips, never on the posterior parts of the mouth. They occasioned a troublesome sensation of burning, gave the patients a disgust for food, deprived them of the sense of taste, and interfered with the free motions of the tongue.

Dr. Betz observed a very similar disease in five cases in children, which he does not wholly identify with that described by Professor Möller, but the points of difference do not appear to be great. Perhaps Professor Möller may bring forward further communications on the subject, when he shall have had opportunities of observing his form of disease in children. A red spot of roundish or oval form appears on the edge of the point of the tongue, but never on its middle line, nor on the base, and is surrounded by a well-defined, often slightly elevated redder margin. This red, sharply defined spot increases from the edge inwards, extending in a curve, and when it arises behind advancing towards the tip. Dr. Betz has only seen it on the back of the tongue; but he has observed the spots in three situations at the same time:—on the left half of the tip and on both margins of the body of the organ, the remainder of the tongue being covered with a whitish fur. The tongue is not swollen or harder in these spots, nor does any secretion or ulceration arise. The little patients made no complaint, nor did the disease appear to be an object for treatment. The morbid process consists in an exfoliation of the horny epithelium of the papillæ filiformes,† splitting at its point into many thread-like processes,—a desquamation of the filamentary papillæ of the tongue. They consequently appear much lower on the red fleshy spot; even lower than the papillæ fringiformes. The spot so denuded is not painful to the touch. Each half of the tongue desquamates by itself; that is, the desquamation does not attack both halves at the same time,

---

* Deutsche Klinik, No. 26.

† See Kölliker's Gewebelehre, 1852. p. 351.

nor does it advance simultaneously on both. When the tongue has exfoliated, the process recommences after three, six, or eight days. I have watched these chronic excoriations during three years in a boy in whom they existed since an attack of jaundice, which occurred about four weeks after birth. The other patients were girls, the eldest of whom was eight years of age. In these children eczematous and impetiginous eruptions appeared from time to time on the face and on the head. As the disease occurs before detention, a bad tooth cannot be regarded as its cause. Dr. Betz could not perceive any influence on the motion of the tongue or on the sense of taste. Since the desquamation of the epithelium is connected with a hyperemia of the filiform papillæ of the tongue, but without the occurrence of ulceration, the author would be inclined to substitute the designation "Pityriasis linguæ" for that of chronic excoriation.—*Journal für Kinderkrankheiten.*

Chloroform in Hypochondriasis. (*Dub. Quar. Jour.*)—At the meeting of the College of Physicians in Ireland in June, Professor Osborne stated that he had lately, in two cases, opportunities of observing a peculiar effect of chloroform taken into the stomach, in controlling the depressing and saddening feelings belonging to hypochondriasis. Considering that state to be produced by a depraved sensibility of the stomach or colon, and frequently of both, he was led to the internal employment of chloroform, which, being promptly volatilized at the temperature of the stomach and before being decomposed by the process of digestion, ought to be expected to act as a local anæsthetic, even though the dose should not be sufficient to produce any change in the function of the brain.

The first patient who presented the conditions requisite for this experiment was a married woman, and a mother, aged 33, of a querulous disposition, as was well marked in her countenance, and who had been on a former occasion under his care and that of another practitioner, complaining of a variety of pains in the abdominal region; and she, although relieved, yet persevered in the belief that she still had some internal disease. She now appeared to labor under spinal neuralgia. After this had yielded to the application of nitrate of silver to the spine, and some other remedies, she still continued to feel an indescribable sensation of depression, and of internal annoyance, no longer to be referred to the spinal nerves;—no cause for it could be detected. The appetite was good, and the action of the bowels regular. In two days, after taking ten drops of chloroform thrice daily, she *began, for the first time, to acknowledge that she was better*, and in a few days afterwards was free from complaint. The second case was that of a caretaker in the Linenhall, aged 29. He complained of the deepest dejection of spirits, and of an uncontrollable aversion to make any exertion. His countenance expressed sadness and moroseness. All the functions were in a healthy state, except that the heart's action became tumultuous when excited either by emotion or exercise; but no organic disease could be detected. He stated

that he had not been addicted to excess of any kind, and that there was no cause for his lowness of spirits. He got valerianate of zinc, and also pills to regulate his bowels; but although the heart's action became steadier, yet the depression and inward sensation continued the same. After taking twenty drops of chloroform thrice daily for two days, *he began to confess*, what he never did before, *that he was better*. His sleep being still unsatisfactory and disturbed by disagreeable dreams, he was ordered to take forty drops at bedtime. He now stated that he slept with a pleasing dream of seeing his brother, who had gone to America. During the two following nights he took the same dose; and, although his sleep was interrupted by the disturbance attendant on a man in a dying state in the same ward, yet when he did sleep his dreams were pleasant, being usually that he was enjoying the company of the most agreeable of his friends. He was dismissed with a marked improvement in his countenance, and *acknowledging that he was better*.

These cases are selected as being nearly free from complication. It must, however, be recollected, that there are several other uses to which chloroform may be applied in affections of the stomach and intestinal tube, but this appears to be one of the greatest value, inasmuch as no other medicine can be named which in this respect seems to come into competition with it. How far the effect is permanent and capable of completely removing the sensation of hypochondriasis, or in what degree it may require to be resumed or repeated, Dr. Osborne as yet has not been able to determine; neither did he think it necessary before this association to clear himself from the absurdity of bringing it forward as a universal *nepenthes*.

With regard to the mode of administering chloroform internally:—as its specific gravity is nearly 1·5, and it is insoluble in water, it must, when swallowed, soon settle at the bottom of the fluids in the stomach; and although it is votalized, yet being covered, and under pressure, it may remain in contact sufficiently long to irritate the stomach at the part of contact, as was proved to take place in the case of camphor by Orfila. Hence, then, it is desirable that it should be diffused or diluted before it is taken. In aqueous mixtures, even when shaken up, it soon falls, so that it cannot be equally measured out, and its pungency is annoying even to the mouth. In gum Arabic mucilage it soon collects in large globules at the bottom of the bottle, covered with a white powder of arabine which it has precipitated. To obviate this inconvenience it has been proposed to give it suspended in syrup, but to make a syrup of the same specific gravity 1006 grains of sugar to the ounce of water would be required, while that of the Pharmacopœia contains only 874 grains; besides, chloroform has a heavy sweet taste which renders the addition of syrup peculiarly objectionable. The menstruum which Dr. Osborne used in the above and other cases was the decoction of Irish moss (carrageen). With this chloroform forms a uniform mixture, and in the proportion of ten drops to the ounce they remain for an indefinite time without separation taking place. The taste of the mixture is sweet like that of a heavy syrup, to relieve which it may be well to add a few drops of some aromatic or bitter

tincture. Another mode of avoiding the pungency of chloroform is by giving it in combination with tinctures, as it is soluble in alcohol, and remains dissolved even in proof spirit. The following is a specimen of this kind of formula, and is peculiarly grateful to the taste, and susceptible of various additions and alterations, according to the requirements of individual cases:—Chloroform, and tincture of ginger, of each half an ounce; aromatic spirit of ammonia, two drachms. Mix. Twenty-five drops to be taken thrice daily in a wineglassful of milk."

New Mode of preparing Ointment of Nitrate of Mercury.—We copy the following note from Mr. Wilde's recently published treatise on the *Diseases of the Ear:*—There is no other medicine in the whole materia medica so frequently prescribed by the practitioner which presents the same differences, both in appearance and effects, as the ointment of the nitrate of mercury. Prepared as directed in any of the pharmacopœias of the three kingdoms, it is impossible to procure it alike in any four different establishments. It is found of all shades of color,—straw-colored, gray, green, yellow, orange, and of every degree of consistence, dry and hard, or soft and pasty. If mixed with almond oil, as in diluting it into an eye-salve, it soon becomes green, and gets a very unpleasant swell, whether covered up or not; and in this state it is often very irritating. Many apothecaries in Dublin do not adhere to the pharmacopœial formula, but make it up according to a form of their own; some use fresh butter instead of lard; and others different kinds of oil, as from habit or experience they find best. On explaining my difficulties, some years ago, to Mr. Donovan, he procured me a citrine ointment of a very dark orange or brown color, soft, perfectly and equally smooth, and which does not alter in any way by keeping, by exposure to light, by mixing with oils, or even by being gently heated to the point of fluidity; and it never acquires an acid smell. Its therapeutic effects I have had long experience of, and they are decidedly superior to those of the ointment in common use, Mr. Donovan has not made known its constituents, nor its mode of preparation. Mr. Nicholls has made for me a citrine ointment precisely similar in color, smell, consistence, and effects; and he informs me that he uses rape oil instead of olive oil, and does not let the heat employed during the preparation exceed 200°. Mr. John Evans has employed cod-liver oil, and also seal oil, and the preparations thus produced are exceedingly elegant and useful ones. Mr. Carroll likewise uses cod-liver oil in the composition of this unguent. Messrs. Bowley have obtained for me a brown citrine ointment, somewhat like those already mentioned, and they inform me that it is by using only the very purest olive oil. I find this ointment a decided improvement on the old preparation, and its composition should be investigated by those engaged in the preparation of medicines and pharmacopœias. When about to be used, it should be melted to the consistence of cream by placing the vessel containing it in hot water. It forms an admirable application in ophthalmia tarsi, as well as in various diseases of the ear.

PART FOURTH.

AMERICAN MEDICAL RETROSPECT.

PHYSIOLOGY.

On the Modus Operandi of Fecundation. By WALDO I. BURNETT, M. D. (*Am. Jour. of Sci. and Arts.*)—With every inquiring mind there is a deep interest connected with the development of animal life. To watch the origin and rise of new forms, to trace the successive phases through which they pass, as the ideas on which they are based become more and more definitely expressed, until finally the perfect animal is produced,—these have been favorite studies from the earliest times with some of the most genial minds, and over which they were accustomed to dwell with increasing delight. But more interesting still, because more wonderful, is the study of those necessary preliminaries of all individual development—the mysterious conditions of fecundation. To observe, after nature has prepared the material, how she puts up a new structure, and to trace the adaptive idea in the lying of each part, require but opportunity united with careful diligence and patience. But to lift the veil beneath which lei hidden the more than mysterious relations of individuality, this is to tread on the confines which separate the material from the immaterial world.

There is no question in physiology so difficult and at the same time so interesting as—*How* is a new individuality started by the conjugation of the sexes; and where so little could be observed, there has been more scope for speculation.

In modern times, however, with certainly better instruments if not better opportunities, we have looked for less talk and more knowledge; and in this respect, it may be justly said that we have approached pretty near that boundary, which, as it is the limitation of that which can be perceived by the senses, it is the real confine between the known and the unknown in physical science.

As it would be profitless to notice the labors of those numerous men, who, in this department have written upon what they really knew nothing, yet speculated much, we shall attempt to show the state of our real knowledge on this *ultimatissimum* of physiology—the *modus operandi* of fecundation.

Modern histological studies have, we think, pretty definitely settled

two fundamental and important points: 1st. That the ovum is, morphologically, only a nucleolated cell; and 2nd. That the sperm-cell is the true homologue of the ovum.

The ovum (fecundated) produces the embryo; the sperm-cell the spermatic particle. The embryo and the spermatic particle are the correlative representatives of the female and the male sex. One is the metamorphosed nucleus (vitellus) of the one; the other, the metamorphosed nucleus (nucleus of the daughter cell) of the other. In both, the ovum and the sperm-cell, the process of segmentation seems a necessary preliminary to the evolution of the new being.*

The strict correlation between the essential products of the sexes is as wonderful as it is beautifully suggestive of the unity and simplicity of plan by which nature proceeds. This point, so seductive in all its relations, might be dwelt upon in detail, but we will continue with main and general facts. The ovum, as a nucleated or nucleolated cell, continues to grow, and whatever size it may attain to by the endogenous formation within its capsule of new cells, yet, when complete, it is, (even though belonging to the *Ostrich* or *Epiornis*,) morphologically, only a great compound nucleated or nucleolated cell. All these conditions of origin, growth, and maturity, can be satisfactorily studied in the lower animals, and we would especially recommend the compound Ascidiæ for this purpose. The ovum, thus complete, is ready for fecundation.

We have already said that the sperm-cell is the analogue, or more properly *homologue*, of the ovum; its origin and development, as we have traced them in all their details, are precisely the same as those of the ovum. The sperm-cell increases to a definite size, its nucleus (vitellus) then regularly segments, 2, 4, 8, 16, &c., and the results of this segmentation are daughter-cells. The condition of the sperm-cell at this moment is like that of the ovum produced by the same process of segmentation. I mean the *mulberry-like* condition. But at this point there is a digression, for with the sperm-cell the nucleus of each of the daughter-cells is changed into a spermatic particle, while with the ovum, the whole mass is metamorphosed into the new being by a process of substitution.

The spermatic particle, then, is only a metamorphosed nucleus of a cell, and, perhaps, were the analogy carried out completely, each daughter-cell would be the representative of a miniature ovum.

Physiologically, the phenomena we have thus briefly described, obtain equally in the vegetable kingdom; for, as recent discoveries have shown, even in the simplest cellular plants, there is a conjugation of two kinds of cells, the product of which terminates in a new generation; in the other plants, the superior cryptogamia, and the phanerogamia, there are parts which in a developmental as well as morphological

---

* See Researches on the Origin, Mode of Development, and Nature of the Spermatic Particles among the Four Classes of the Vertebrata.—*Mem. Amer. Acad., N. S.*, v. *pt.* i, 1853.

point of view, corespond to the essential male and female products of animals.*

Throughout the organized world, therefore, the conditions which wait upon the true generative process are the same—the combination of the representative products of two distinct sexes—and these products, whatever may be said of their form, are always physiologically the same;—they are cells or cell-products.

Here we would make a general statement which embodies a great deal of physiology on this subject: A true generation must be regarded as resulting only from the conjugation of two opposite sexes, from a sexual process in which the potential representatives of two individuals are united for the elimination of one germ. The germ power thus produced may be extended by gemmation or by fission, but it can be formed only by the act of generation, and its play of extension and prolongation by budding or by division must always be within a certain cycle, and this cycle is recommenced by the act of the new conjugation of the sexes.

In this discussion, we have satisfactorily reached this point that the ovum and the spermatic particle are the potential representatives of the sexes to which they respectively belong. From their union results the condition of fecundation; the grand question now is, What is the *modus operandi* of this fecundating act? Bischoff's view, based upon speculative probabilities rather than upon observation, is, that contact alone of the spermatic particle with the ovum being sufficient for fecundation, impregnation consists in a kind of catalysis which has its exemplification in chemical conditions as enunciated by Liebig, (see loc. cit., p. 425.) But if catalysis embodies conditions in the organic like those of its relations in the inorganic world, it falls very far short of affording the requisite explanation of these phenomena, as we hope soon to show. This field of probabilities and possibilities we shall enter upon again.

Newport's contributions upon the physical phenomena of this subject are far the most complete that we have, and being the results of a most trustworthy observeer, they deserve our special attention.

Newport's experiments and observations show, in brief, that contact alone of the spermatic particles with the ovum is requisite for fecundation, that each ovum requires several particles; and that there must be *duration* of this contact. Here is a limit to observation of physical facts, and we regard these important data worthy of full trust, considering the source from which they come. This author discusses briefly the question of the impregnative power, and from the fact that the spermatic particles are sometimes seen to disappear on the surface of the egg-envelopes, he thinks it may be fair to conclude that the agency of this body is material in its operation; on the other hand, the fact

---

* We would refer to a profoundly physiological memoir by *Robin*, titled, "Ovum, its Existence as well in the Male as in the Female of Plants and Animals," &c. Compt. Rend., 1849.

of a mere *momentary contact* producing changes in the ovum, suggests in his mind the so-called catalytic power of certain known bodies. But he thinks that neither this last, nor endosmosis, are sufficient to account for the phenomena of this grand act.

The view of Keber has at least the merit of being unique if nothing more. As long ago as 1838, Martin Barry* announced that he had observed spermatic particles without the ovum. It should be mentioned, however, that long previous to this, Prevost and Dumas† in their researches found these particles within the envelopes of the eggs of frogs. But Keber's alleged discovery is, that the introduction of the spermatic particles within the ovum, takes place through a special opening, a kind of micropyle, or an infundibuliform passage. This discovery was made upon the eggs of muscles (*Unio* and *Anodonta*).

The announcement of the presence of such a structure on the ovum is indeed wonderful, and more especially so since other observers, whose attention has been particularly directed to the embryological study of these animals, have failed to notice it, although one would suppose that an apparatus of this kind must be very visible. Keber affirms that he has observed a like structure in the ova of some other animals which he has examined. But, however well fortified he has sought to make his observations, they certainly need more than the usual confirmation, and we cannot but regard it as far from being a settled fact in embryology, that the ovum has a direct structural communication externally for the ingress of spermatic particles to its interior.

After all this discussion of facts, we revert to the primary question, What is the nature of the fecundating act? We have seen that its physical phenomena consists in the contact of active vital spermatic particles with the mature ovum; that this mature ovum, thus effected, experiences peculiar changes which terminate finally in the evolution of a new being possessing the characteristics of the male as well as the female parent. It is true that, as was observed by Prevost and Dumas, and as has since been confirmed by Barry, Newport and others, the spermatic particles may force their way through the envelopes of the egg some distance into its interior, but we regard this as an unessential condition of the fecundatory act; adhering by their heads to the envelopes of the egg, the incessant action of the tails of these bodies would obviously tend to force them inwards, and especially through such homogeneous, soft tissues as the egg-envelopes.

By referring to the resultant phenomena of this fecundating process, we may perhaps gain some insight into the conditional if not the real nature of its agency. We have already said that the spermatic particle is the potential representative of the male; what signification is it to be attached to its mere physical form, that is, whether it is conical, globular, &c., we know not; and this seems the more hidden from our perceptions, from the fact that exactly similar forms and

---

* *Barry*, Philos. Transact. 1840. pt. ii, p. 532—1843, pt. i, p. 33.

† *Prevost* and *Dumas*, Ann. d. Sc. Nat. ii, p. 233.

sizes,—in fact, physical relations apparently identical,—belong to spermatic particles of animals as widely dissimilar as could be. This fact alone, of the correctness of which we are well assured from our own observations, should be sufficient to convince us that we have here to deal with no very simple relations or properties. But let us pursue the subject a little farther. I scarcely need remark, that the offspring partakes equally of the physical peculiarities of both parents. It will at once be perceived, that in no way can a child receive those of the father except through the medium of the spermatic particles. And so, however strange it may appear at first, yet the conclusion is irresistible that spermatic particles must contain, concealed within them, in fact must be the vehicles of, not only the general peculiarities of the father as an animal, but mental dispositions also, and, as it is too often true of our own species, morbid taints superadded to all. It is wholly insufficient to say with Bischoff, that these anomalous conditions belong to the catalytic action; or with Newport, that they may be the exemplification of a force, peculiar and *sui generis*. For there is something above and beyond the wakening of latent forces, of one particle that is positive with another that is negative. The grand fact is, that the act of fecundation includes—whatever may be said of its also vitalizing the ovum—the communication or the transmission of the *individuality* of the male parent to the ovum; and the material organ of this transmission is, exclusively, the spermatic particle. We cannot see that these phenomena have an adequate explanation in any chemical relations of matter yet known, and what is more, we cannot conceive the possibility of this ever being the case, unless, indeed, chemistry gets beyond the domain of physics. Not but that chemistry involves points which are equally obscure, such as affinity, isomorphism, &c., but then the conditions of vitality, and especially the grand manifestation of it in question, certainly seem to us to include relations which have no correlation whatever with those pertaining to inorganic matter. To us the relations and conditions of cells, which are the primordial forms of organization, demand the *teleological* view of organic life.* *Individuality* is the distinguishing feature of organization, and we recognize in it something more than a mere collocation of physical conditions; we regard it as an idea which exists before organization, which last is only the language in which the idea is expressed. The conditions of this process of fecundation which we have just reviewed, will accept no other explanation, say what physiologists may about the *unphysical* character of such a view; we must have something beyond mere *combination*, which lies with physics; this we have in *development*, which lies with life.

In conclusion, we may say, that as the domain of science lies with demonstrable phenomena, so its legitimate study is with the sensible and tangible. The conditions of immaterial agencies, and their re-

---

* See the Relations of Cells to the Physical and Teleological Views of Organization, in Silliman's Journal, xv, 87, Jan., 1853.

lations with material forms, must be accepted as pure phenomena incapable of the analysis of ordinary scientific facts. But, after all, how much more of an enigma is the process of fecundation than the essence, the primordial cause of everything connected with both the inorganic and organic world about us. Science should put out her long, tentacular arms in all directions, laying hold of the tangible and the sensible, but it should be remembered that the supra-sensible is beyond her pale, and that "*multa esse constant in corpore quorum vim rationemque perspicere nemo, nisi Qui fecit, potest.*"

PRACTICAL MEDICINE.

Yellow-Fever in Philadelphia. (*Quart. Sum. Trans.*)—Dr. Jewell presented to the College of Physicians, Philadelphia, at its meeting in August, the history of the fever which prevailed in that city in the month of July.

It appears that the barque Mandarin arrived at that port July 12, from Cienfuegos, Cuba, and, after undergoing the usual scrutiny at Quarantine, was allowed to proceed to her wharf on the following day. There was no cause of alarm until the cargo was removed, when a very offensive smell was noticed to proceed from the hold, which became intolerable whenever the bilge water was disturbed by the pumps. The first case of suspicious fever occurred July 19, in the person of a carman, whose stand was near the point where the cargo was discharged; and from this date to the 27th, seventeen cases occurred in this vicinity. Of these eleven died. In but eight was it known that black vomit existed, all of whom perished. Dr. J. concludes:—1. That no disease of a malignant type was prevailing in the city previous to the arrival of the Mandarin. 2. That none of the seamen discharged from the Mandarin have sickened. 3. That none of the laborers employed in unloading the Mandarin have taken the disease. 4. That the fever did not develop itself until after the cargo was discharged, when, it is believed, that the noxious emanations which had been latent in the hold, had an opportunity, acted upon by certain exciting causes, as heat and moisture, to disseminate itself, and coming in contact with other elements of decomposition existing on shore, and in the docks, soon poisoned the atmosphere of the immediate neighborhood, where the vessel lay moored. 5. That in no instance can the disease be traced to any individual, except among those who either visited or resided in the immediate vicinity of the wharfs where the vessel lay. 6. In no instance has the disease been communicated to any person visiting, or engaged in attendance upon the sick.

At the meeting of the Society in September, Dr. Jewell presented additional particulars, and new cases of fever:—The barque Mandarin was taken in charge by the Board of Health, July 26, scuttled, cleansed, and finally extensively repaired, and dispatched with a cargo for New-Orleans. Although workmen were constantly employed upon her after her removal from the wharf by the health officer, no one suffered an attack of fever. In addition to the morbific atmosphere

which developed itself on board this vessel when her cargo was discharged, there existed in the immediate vicinity of the wharf causes which we must suppose had an agency in the development of the disease. Such were the outlet of a sewer, with its accumulation of putrid animal and vegetable matter, which was exposed to the rays of the sun at low water; a foul wharf; a filthy avenue, improperly drained; numerous damp and confined cellars, subject to an occasional overflow by the ebbing and flowing of the tide-water, and various minor causes fruitful in the production of atmospheric changes injurious to health.

Dr. J. has tabulated the cases which he has collected, 44 in all, with the following results: 9 cases were under the age of 20; 18 between 20 and 30; 10 between 30 and 40; and 7 over 40. Twenty-five were males and nineteen females. Twenty were natives of Ireland; four of Germany; five of England; and fifteen of the United States. Thirty-seven could be traced directly to the infected district; in four the origin was doubtful; and in three no clue could be obtained as to where the disease was contracted. Of the 44 cases, 34 died; the mean duration of the disease in those who died, was four days; in one case it was protracted to the fourteenth day. In 26 of the 44 cases recorded, the dark-colored "coffee-grounds" ejection from the stomach, or black-vomit, was observed. When placed under the microscope this substance exhibited the true blood-corpuscles in every case but one; this case recovered, and its genuineness is therefore doubted. In 11 cases, post-mortem examinations were made, and, in all, the yellow or ochre-colored liver was detected in whole or part; the "coffee grounds" fluid, or malæmic blood was also found either in the stomach or intestines of all these cases. The mortality was 80 per cent., or 5 to 1 of recoveries.

The treatment generally pursued in the first stage was blood-letting from the arms, and by cups to the back and abdomen, emetics, mercurial purges, diaphoretics, &c. In the second stage, or as soon as a remission took place, which was generally about the third or fourth day from the attack, calomel, as a sialogogue was administered in some cases, in others quinia, in three or five-grain doses, every one or two hours. If reaction was not prompt, brandy or wine internally, and local stimulating applications by blisters and rubefacients, were resorted to. Quinia in full doses, on the first intimation of a remission from fever, appears to have been a favorite remedy. In some cases, over seventy grains were administered daily for several days, and, as far as we could learn, without any annoyance to the brain or other organ, but with advantage. In Blockley Hospital, cases were treated without quinia in any stage of the disease; calomel pushed to salivation was the principal remedy employed.

In the discussion which followed this communication, the fact of a fatty degeneration of the liver having been detected in those who had died of yellow-fever, was referred to by Dr. La Roche, and confirmed by Drs. Bache and Keating in the autopsies made at the Pennsylvania and St. Joseph's Hospitals. In all the cases, the cells of the liver were found to be filled with an oily substance.

SURGERY.

Aneurismal Tumors upon the Ear, successfully treated by the Ligation of both Carotids.—Dr. Mussey reports a case (*Am. Jour. Med. Sci.*) of ligature of both carotids for aneurismal tumors occurring upon the ear. The patient was aged 19, and had from childhood a cutaneous nævus in front of the left ear; about eight years since small elevations of the integument were observed at the points where the tumors arose, having a perceptible pulsation after exercise. They gradually increased in size, and at the time of the operation one occupied the cavity of the concha, rising above the level of the antitragus, and another covering the tragus, and, extending some way anterior to it, was as large as a middling-sized nutmeg. There was also a globular tumor of the same character beneath the ear and between the mastoid process and ramus of the jaw, having the size of an Isabella grape. The most promising course of treatment was thought to be the ligation of one or both carotids. The success of Mr. Travers' case in 1809, in which the primitive carotid was tied for "aneurism by anastamosis of the orbit;" of Mr. Dalrymple's case in 1813; and Dr. J. M. Warren's case in 1846, where both carotids were tied for a vascular tumor of the mouth, face, and neck, gave a reasonable hope of success in this case. Accordingly, on the 18th of November, the left carotid was tied, and the pulsation in the tumor ceased immediately. No unfavorable symtom occurred, and on the 12th day he was allowed to sit up, when indistinctness of vision in the left eye was complained of; this gradually passed off. Though the tumors diminished in size, the entire success of the operation was doubtful, and in four weeks the operator tied the right carotid. In both instances the ligature was applied just below the crossing of the omohyoid muscle. One ligature came away in sixteen days, the other in twenty. The tumors now subsided more rapidly, and subsequently their reduction was hastened by the application of collodion. In seven weeks scarcely a vestige of the tumors remained, and in three months the cure was complete.

Amputation at the large Articulations. By Wm. H. Van Buren, M. D., Surgeon to the N. Y. Hospital.

Compound Comminuted Fracture of the Femur, near the Great Trochanter, with extensive Laceration of the soft Parts; Amputation at the Hip-Joint; Death. Eliza Reid, æt. 9, was admitted into the Hospital on the 5th of July, two hours after being run over by a railroad car, which produced a compound comminuted fracture of the femur, and extensive laceration of the anterior portion of the thigh; the wound extending from two inches below Poupart's ligament to the knee-joint. No pulsation could be felt in the anterior tibial artery. There was considerable vomiting before admission. Reaction having taken place, a consultation was called, and amputation at the hip-joint advised; Drs. Cheesman, Buck, and Markoe being present. At 10 o'clock, the patient being placed under the influence of ether, the operation was performed, by antero-posterior flaps, and the wound brought

together as rapidly as the safety of the patient would admit. Very little blood was lost during the operation. The patient vomited during the administration of the ether, rejecting some half-digested food, which had been taken before the accident. The shock of the operation was excessive, but in two hours the patient had completely rallied, under the careful use of stimulants, and, all circumstances being considered, passed a favorable night. The condition of the patient appeared promising until the morning of the 7th, when the pulse began to grow more feeble and frequent, and slight delirium was noticed. From this time she sank gradually, and died at 2 o'clock, P. M., forty-six hours after the injury, and forty-two after the operation.

The fatal issue in this case was attributable mainly to the excessive depression of the powers of life, which always follows railroad injuries. The child rallied from the fearful injury she had received, and also rallied well after the operation; but sank in the effort at reparation. A *post-mortem* examination showed union already partially effected in the stump, and no internal injuries were detected. The mode of operating adopted in this case, was that which had already been performed by the attending surgeon, in a case followed by recovery; the posterior flap being made by an incision carried from without inwards.

Compound Comminuted Fracture of Humerus, near Shoulder-Joint, with Wound of Brachial Artery; Amputation at Shoulder-Joint; Recovery. Christopher Fricke, æt. 35, a healthy German, of temperate habits, was admitted on the 1st of July, with a comminuted fracture of the humerus, at its surgical neck, accompanied by severe bruising of the surrounding parts, and occasioned, a few hours previous to his admission, by the fall of a building, at which he was employed at work. One of the fragments of the humerus had been forced through the integuments on the inside of the arm, near the axilla, lacerating the soft parts extensively, and wounding the brachial artery. The limb was much infiltrated with blood; its temperature was much lower than that of the opposite side, and no arterial pulsation could be detected below the seat of the injury. No hemorrhage. On the following day, reaction having taken place, a consultation was called upon the case. It was determined to endeavor to secure the wounded artery, to explore the extent of the injury, and, if possible, to endeavor to save the limb. A ligature was accordingly placed beneath the axillary artery, after the administration of ether; and the incision thus made was prolonged downwards, over the brachial artery, into the original wound. Several arterial points were secured, but the comminuted state of the bone, and the extensive detachment of the soft parts around its head, together with the extensive infiltration of blood amongst the injured parts, rendered the removal of the limb evidently advisable, and this was accordingly effected by means of antero-posterior flaps. Serious collapse followed, from which the patient rallied in a few hours under stimulants, and subsequently recovered, without a serious symptom. He was able to leave his bed within three weeks from the operation, and was discharged, cured, on the 11th of August.—*N. Y. Med. Times.*

Excision of the Tonsils.—In a report on the Surgery of Cortland County, to the Medical Association of Southern Central New-York (*Trans. of Assoc.*), Dr. C. Green makes the following interesting remarks upon the practice of removing the tonsils:—

I have operated on about twenty different patients, and in thirteen of the cases I have amputated both tonsils. The ages of the patients have varied from three and a half to thirty-six years. The circumstances indicating the necessity for these operations have been various, but the principal one has been the tendency to repeated attacks of tonsilitis, and of pharyngitis. In several instances there have been superadded to these indications for removal the existence of deafness, and an embarrassment of articulation. Another circumstance has, in a few instances, induced me to remove the tonsils, viz: laborious respiration during sleep, producing exhaustion, disturbed sleep, and even incubus. These symptoms are often observed in young children, and are very distressing, and sometimes seriously encroach upon the general health. There are cases where the tonsil is not much enlarged, but where the large mucous follicles (of which it is a congeries) become obstructed by calcareous concretions, which keep up a sub-inflammatory state of the tonsil, the fauces and the adjacent parts. In these instances, the removal of a portion of the tonsil will prevent the calcareous accumulation, and allow the surrounding membrane to resume its normal condition. The amputation of the tonsil is also indicated where, in the case of children, the tonsil is very large, and where suffocation is threatened at every renewal of inflammation from the impression of cold, and where there is danger of the induction of croup by extension of the inflammation.

The question arises, is there no therapeutical agent which can supplant the knife in the treatment of enlarged tonsils? I answer, in brief, that after repeated trials of nitrate of silver, iodine, and other medical treatment, and after marking the experience of other surgeons for the relief of this affection by medicines, and comparing the results with the effects of the knife, I can say most emphatically, that for safety, promptness, and efficiency, the knife is superior to all other means employed.

Another question frequently put to the surgeon by patients, and sometimes by physicians too, is, "Do the tonsils grow again, after amputation?" Prof. Hamilton, in an able article on enlarged tonsils, in the third volume of the Buffalo Medical Journal, says (page 195) that, according to his experience, when the whole or two-thirds of the gland is cut away, no more trouble is experienced from it; but that when one-half, or one-third is removed, the balance does not generally disappear, and not unfrequently it again enlarges. This is not in accordance with the experience of many surgeons, nor with my own. Dr. Hyde has seen it but once. My opinion is, that in nearly all the cases of supposed regrowth, it is an appearance and not a reality. Dr. J. Mason Warren, of Boston, in an able article on "Enlargement of the Tonsils, attended with certain Deformities of the Chest," published in 1839, (Am. Jour. Med. Sci., Aug., 1839, p. 525,) mentions one case in a list of nineteen, where, at the end of a short period after amputation, an

appearance was presented as if they had been re-generated. This, he remarks, arose from the original shape of the tonsil, in which the base was very broad, and extended some distance down the throat. The appearance of reproduction arose from the upper and lower portions rising or curling up, as it were, after the apex was removed.

This leads me to speak of lobed tonsils. I have had two cases in which the tonsils were each divided for about two-thirds of their lateral depth into two lobes. In the first of these cases, both lobes stood out prominently from the arches of the palate, so that I removed them by operating twice on each tonsil—each lobe being about the ordinary size of a hypertrophied tonsil, the remaining portion atrophied; and an entire relief of the symptoms, for which removal was demanded, was the result. In the other case, I was not aware of the existence of the posterior lobes, until some days after the amputation of the anterior ones. At the end of that time, the patient, a young lady, presented herself again, saying that her tonsils had grown again; and, to my astonishment, I found, on looking into her throat, two plump-looking tonsils as ever need be, standing out about three-quarters of an inch from the edges of the palate. It was twilight, and I did not like to yield my opinion, previously expressed in reference to the reproduction of amputated tonsils, until I could have more light upon the subject. The next day, by a strong light, I examined the throat, and found at the base of the "new" tonsil the cicatrix left by the amputation of the anterior lobe. The difficulty was at once explained. The anterior lobes had pushed the posterior ones backwards and downwards along the side of the pharynx, so that their existence was not suspected before operation, and at the time of it they were obscured by the coagula, which immediately formed about the divided surface of the first lobes. When the pressure of the anterior lobes was removed, the posterior ones resumed the usual position, and we had a marked instance of what is supposed to be a regrowth of the tonsil. I am willing, however, to subscribe, in part, to Dr. Hamilton's views on this subject, for I believe that if only a *small* portion of the gland is removed, the same condition of the organ remains—the morbid vascularity is kept up, and the tonsil *continues* to enlarge. The conditions which contra-indicate amputation, where for other reasons it is desirable, are inflammation of the substance of the tonsil, and the hemorrhagic diathesis.

As to results of the operation, I must say that they have, in my experience, been almost uniformly gratifying. I cannot recall to mind one instance where I think injury was done to the throat by the operation, and but two instances in which no benefit was derived. I have witnessed profuse bleeding in but one instance. This was in the person of a young man with whose constitutional peculiarities I supposed myself acquainted, and so did not make the inquiry, which I rarely omit, whether he was apt to bleed much for slight wounds. In this case I found the patient to be of a decidedly hemorrhagic tendency, and in ten or fifteen minutes after the operation, I found him in the state of partial syncope; and it was not until a minute afterwards that I was aware of the extent of the hemorrhage; for immediately after the operation he reclined upon a settee, and in that position, instead of disgorging

the effused blood, he swallowed it, and when faintness came on, he vomited a large quantity of coagulæ. I immediately applied the neck-cloth, filled with pounded ice, and the bleeding was promptly arrested. This, by the way, is the most efficient remedy for this accident which we possess.

My strong conviction is, that this operation ought to be resorted to much oftener than it is by a majority of practitioners. There is no doubt that some operators have made this a surgical hobby, and see an indication for cutting in every throat, but the mass of practitioners, so far as my observation and acquaintance extend, are willing to let the matter go, if they can be excused from operating, or, perhaps, in many instances, they do not appreciate the indications for the removal of enlarged tonsils.

Felt Splints. By F. H. Hamilton, M. D.—Some years ago, I think in 1845, Felt Splints were brought to me by an agent of the manufacturer. The felt was sold in sheets, and also in pieces, modelled so as to be readily adapted to the form of the limbs. In some respects it was superior to gutta percha, and I am inclined to think that on the whole it was the best splint ever used. I cannot learn that these splints are now manufactured in any part of the United States, and I will therefore inclose you the recipe for making them, which was kindly given me by the agent, and which I have frequently used myself:—Dissolve three pounds of gum shellac in two quarts of alcohol. It should be dissolved in a tin vessel, furnished with a tight cover to prevent evaporation. Spread a piece of old or new woolen cloth on a board, and with a clean brush saturate both sides of the cloth with the solution. Hang it up until it is thoroughly dried. Lay it again upon the board and apply a second coat of the solution to one side only of the cloth. Dry again, and apply a third coat to the same side. There will now be three successive layers upon one side and one on the opposite. While the last coat is yet fresh, fold the cloth so that the side having three coats shall be applied to itself. Now, with a hot flat-iron, smooth and press the surfaces together. When it is cold, a slight rubbing with sand-paper makes it fit for use. It becomes a firm, almost unyielding board, but exposure to a moderate heat will make it pliant, so that it can easily and accurately be adapted to any surface. —*Buff. Med. Jour.*

EDITORIAL AND MISCELLANEA.

Institutions for the Treatment of Special Diseases.—There is a necessity existing in all large towns for the establishment of institutions for the treatment of certain diseases. The idea is in part realized by the creation of institutions for the insane, the deaf and dumb, the blind, etc. But in European cities this principle is carried out much farther in the erection of hospitals for the treatment of certain forms of disease which, from their nature, require isolation from other diseases, or methods of treatment difficult of application in general hospitals.

Thus we have hospitals for the venereal disease, for skin diseases, for consumptives, for sick children, orthopædic institutions, &c. &c. In each of these the greatest facilities are afforded for the treatment of the several forms of disease peculiar to each, either in surgical appliances or remedial measures.

There is existing in New-York an equal, and owing to its immense immigrant population, perhaps a greater necessity for the creation of institutions for the treatment of special diseases than in foreign cities. No charitable enterprise could be initiated more laudable in its inception, and more humane in its results, than the erection of a hospital for the consumptives. This large class of patients, which crowd the wards of all our hospitals, and hourly apply for relief at every public charity, demand special provision for their remedial and hygienic treatment, which no general hospital can afford. That phthisis is in any considerable degree amenable to treatment we do not assert, but that the pauper consumptive may be greatly benefited, his life prolonged, and the ills of a protracted and insidious disease greatly mitigated by being placed under circumstances best adapted to his physical and mental condition, there can be no doubt. There is also the same need of a hospital for drunkards. It is a well established fact that a large class of confirmed inebriates are laboring under a species of insanity as destructive to the mental and physical health of its victim, and as dangerous to society at large, as that which afflicts nine-tenths of the inmates of any lunatic asylum. To restore them to health requires total abstinence from all that can intoxicate, and a lengthened term of moral training, surrounded by influences all tending to invigorate the moral and physical nature of the individual. We need not specify other instances in which the philanthropy of our profession should employ itself in ameliorating the condition of the sick. It is not our province to appeal to the public to erect hospitals, and create charitable institutions; this belongs to private effort and individual appeal; but we may not inappropriately urge this subject upon the attention of the profession, well satisfied that the public will second with material aid any effort which they may put forth to establish new charitable institutions in our city. When the initiatory steps have been taken in such an enterprise with the proper motive, there has never yet been wanting a public emulation in its successful prosecution.

We may notice in this connection the recent establishment of two private institutions based on the considerations above given; the first an orthopædic institution, in the neighboring city of Brooklyn, by Drs. Louis, Bauer and Barthelmess; and the other, an institution for the treatment of the accidents of parturition, in this city, by Dr. Sims, late of Alabama. Of the qualifications of the former gentlemen to treat the deformities incident to articular diseases with an enlightened conception of the pathology of these affections, and the principles of treatment, our readers have had ample means of judging by the recent highly interesting papers which they have contributed to this Journal. Their institution is prepared for the reception of patients, and well supplied with attendants and all the appliances necessary for the successful treatment of the subjects of articular disease and deformities. Compelled by delicate health to seek a residence in a northern climate,

Dr. Sims has located in New-York, and opened a private institution in one of the pleasantest portions of the city, for the purposes already indicated. There is not a more pitiable class of patients in community than the subjects of vesico-vaginal fistula—an accident which Dr. S. has treated with much success.

An Act relating to Appointment of Members of the State Medical Society.—We desire to call the attention of county medical societies and our readers to the following "Act" of the Legislature, passed June 4th, 1853. By this it will be seen that the ratio of representation from county medical societies is materially increased; an increase which it is hoped will augment the scientific resources, and further the best interests of the parent society. The passage of this law, we believe, is mainly due to the efforts of Dr. Thomas W. Blatchford, of Troy.

Laws of the State of New-York, 1853. *Chapter* 317, *page* 660. *An Act to amend an Act, entitled "An Act to incorporate Medical Societies, for the Purpose of regulating the Practice of Physic and Surgery in this State,"* passed April 10th, 1813.

Passed June 4th, 1853.

The people of the State of New-York, represented in Senate and Assembly, do enact as follows:

§ 1. Section third of said act is hereby amended as follows: Instead of the words "said society shall be composed of one member from each of the county societies in the State," it shall read, "said society shall be composed of as many members from each county medical society as there are members of the assembly from such county."

§ 2. This act shall take effect immediately.

To the Medical Profession in New England and New-York.—We have received the following circular from Prof. Hooker, with a request that we would call the attention of the profession to the matter. We hope that the desires of the chairman of the committee will be liberally responded to, and that every member of the profession will feel that he is individually responsible for the production of a portion of the materials for the report.—*Ed. N. Y. Jour.*

The undersigned, chairman of the committee on epidemics in New-England and New-York, in order to make a report at the coming session of the American Medical Association, must have material for this purpose from medical men in different portions of the field indicated. No report has been made from this section since the appointment of the committee at the session in Charleston in 1851, *simply from want of such material.* The chairman would therefore call upon such of the profession in New England and New-York, as have in their possession interesting facts or results of general observations, to furnish them to him, that they may be embodied in his report. It would be well to have the observations cover all the period since the appointment of the committee, viz., May, 1851. It is not deemed necessary to specify the

points on which observers can report, as these will readily suggest themselves. It is desired that all communications be forwarded by the 1st of March. WORTHINGTON HOOKER.

New Haven, Dec. 20, 1853.

Harvey demonstrating the Circulation of the Blood.—We have received from the publisher, Mr. G. S. Appleton, an engraving of Mr. R. Hannah's celebrated painting, representing Harvey demonstrating to Charles 1st his theory of the circulation of the blood. As a strictly professional piece, laying aside all other considerations, it is deserving of the approbation of the profession. In the execution of it the artist has taken great pains to preserve the likeness of Harvey, and was guided by his excellent portrait, by Cornelius Jansen, in the College of Physicians, London. This engraving deserves a place in the office of every physician.

Adhesive Plaster.—Mr. John M. Davidson, of this city, has forwarded us a specimen of adhesive plaster, which upon trial we have found to possess many advantages over that in ordinary use, and which we commend to the notice of the profession.

OBITUARY.

DEATH OF THOMAS G. MOWER, M. D.—Dr. Mower died at his residence in this city on the 7th of December last. He was one of the senior surgeons of the U. S. army. Dr. Mower served with distinction in the Frontier War of 1812. He was a gentleman of varied scientific attainments and a profound scholar in the science of medicine. His communications to the literature of the profession were few, but able and scientific. In the second volume of the *N. Y. Journal of Medicine* will be found a paper from his pen, on the History of the Institution of Meteorological Observations by the Army Department, and the existing state of Meteorology in this Country, which is highly creditable to the scientific zeal and literary taste of its author. In the inception of this Journal he was one of its warmest supporters.

DEATH OF R. L. SCRUGGS, M. D.—We regret to notice in *The Southern Journal of the Medical and Physical Sciences* for November, an announcement of the death of Dr. Scruggs, one of its corresponding editors. He died at his residence in Shreveport, La., on the 27th of Sept., of yellow-fever, which prevailed as an epidemic in that vicinity. Dr. S. was a native of Tennessee, but had been a resident of Louisiana for the last fourteen years of his life. He was an eminent physician, a vigorous practical writer, and his loss is mourned by his editorial associates.

DEATH OF FRANCIS BULLOCK, M. D.—Dr. Francis Bullock, Resident Physician of the Lunatic Asylum, of Kings Co., at Flatbush, L. I., died Aug. 1, 1853, of typhoid fever, in the 26th year of his age. Dr. Bullock had filled the appointment, which he held at the time of his death, for the past three years and a half, with great fidelity and acceptance, and evinced a skill and maturity of judgment indeed singular in one so young.

TO READERS AND CORRESPONDENTS.

ERRATA OF THIS NUMBER.

The reader is requested to correct the following errors, which have inadvertently crept into this number of the Journal.

Page 162, line 6, for "f℥ iv," read "ʒiij."
" 164, " 24, " "f℥ iij," " "fʒiij."
" 165, " 18, insert "for" after "prescribed."
" 166, transpose lines 7 and 8.
" 168, line 6 from bottom, for "stag" read "stage."
" 231, for "Pareira" read "Pereira."
" 256, " 8 " " dele "not."

The following publications have been received :—

A Treatise on the Diseases of the Eye. By W. LAWRENCE, F. R. S., Surgeon to St. Bartholomew's Hospital, etc., etc. A New Edition. Edited, with numerous additions, and two hundred and forty-three illustrations, by ISAAC HAYS, M. D., Surgeon to Wills' Hospital, etc. etc. Philadelphia : Blanchard & Lea, 1854, 8vo, pp. 948. (From the Publishers.)

A Practical Treatise on Inflammation of the Uterus, its Cervix and Appendages, and on its Connection with Uterine Disease. By JAMES HENRY BENNET, M. D., Member of the Royal College of Physicians, etc., etc. Fourth American, from the Third and revised London Edition. Philadelphia : Blanchard & Lea, 1853, 8vo, pp. 430. (From the Publishers.)

Homœopathy : its Tenets and Tendencies, Theoretical, Theological, and Practical. By JAMES S. SIMPSON, M. D., F. R. S. E., Professor of Midwifery, University of Edinburgh, etc., etc. First American, from the Third Edinburgh Edition. Philadelphia : Lindlay & Blakiston, 1854, 8vo, pp. 304. (From the Publishers.)

Clinical Report on Dysentery, based on an Analysis of Forty-nine Cases With Remarks on the Causation, Pathology, and Management of the Disease. By AUSTIN FLINT, M. D., Professor of the Theory and Practice of Medicine in the University of Louisville, Ky. Buffalo : Jewett, Thomas & Co., 1853, pp. 90. (From the Author.)

Clinical Report on Chronic Pleurisy, based on Analysis of Forty-seven Cases. By AUSTIN FLINT, M. D., Professor of the Principles and Practice of Medicine in the University of Buffalo, N. Y., and in the University of Louisville, Ky. Buffalo : Jewett, Thomas & Co., 1853, pp. 58. (From the Author.)

On the Etiology, Pathology, and Treatment of Fibro-Bronchitis, and Rheumatic Pneumonia. By THOMAS H. BUCKLER, M. D., formerly Physician to the Baltimore Almshouse Infirmary. Philadelphia : Blanchard & Lea, 1853. (From the Publishers.)

Human Anatomy, Physiology and Hygiene. By T. S. LAMBERT, M.D., Lecturer on Physiology at the Pittsfield Institute (for young ladies), etc., etc. Illustrated with nearly three hundred Wood-cut and Lithographic Engravings. Hartford: Brockett, Hutchinson & Co. New-York: Ivison & Phinney, 1854. 8vo, pp. 456. (From the Author.)

Prize Essay, on the Use and Abuse of Alcoholic Liquors, in Health and Disease. By WILLIAM B. CARPENTER, M.D., F.R.S. Author of "The Principles of Physiology," etc., etc. With a preface, by D. F. CONDIE, M.D. Philadelphia: Blanchard & Lea, 1853. 12mo, pp. 178. (From the Publishers.)

A Treatise on Venereal Diseases. By A. VIDAL, (de Cassis), Surgeon of the Venereal Hospital of Paris, etc., etc. With colored plates. Translated and Edited by GEORGE C. BLACKMAN, M.D. Fellow of the Royal Medical and Chirurgical Society of London, etc., etc., etc. New-York: Samuel S. & Wm. Wood, 1854. 8vo, pp. 499. (From the Publishers.)

Materia Medica, or Pharmacology and Therapeutics. By WILLIAM TULLY, M.D. Vol i. No. 9. Springfield, Mass.: Jefferson Church, M.D., 1853. ☞ This number fully sustains the character of the work. We shall wait with no little desire for the completion of the work. From some cause the 6th and 8th numbers have not been received.

The Therapeutical Powers and Properties of Veratrum Viride. By WESLEY C. NORWOOD, M.D., of S. C. New-York: 1854. 8vo, pp. 40. ☞ This pamphlet is intended as a circular, setting forth the author's views of the use of Veratrum Viride in Medicine, and also commendatory notices of physicians who have used his tincture in practice.

Homœopathy: An Introductory Address to the Students of Sterling Medical College. Nov. 2d, 1853. By CHARLES A. LEA, M.D., Prof. &c., Columbus, O., 1853. 8vo, pp. 40. ☞ Like all the productions of Dr. Lee's pen, this is a finished performance. It is a master-piece of argument, based upon facts which have, and will to all time, prove the baselessness of this heresy.

A Lecture Introductory to the Course of Lectures in the Medical Institution of Yale College, Sept. 9th, 1853. By JONATHAN KNIGHT, M.D., Prof. of Surgery. New-Haven, 1853. 8vo, pp. 19. ☞ This is an exceedingly interesting lecture, containing as it does a succinct account of the rise and subsequent history of the Medical Department of Yale College,—the fourth medical school, in order of age, established in the United States.

Doctors Commons, an Ethic Address delivered before the District Medical Society, for the County of Burlington, N. J., Jan. 10th, 1854. By S. W. BUTLER, M.D., President of the Society, Burlington, 1854. 8vo, pp. 12.

☞ Communications intended for publication, and Books for Review, should be sent, *free of expense,* directed to Drs. Purple and Smith, Editors of the New-York Journal of Medicine, 183 Hudson-street, *New-York.* Persons at a distance may direct parcels, or exchanges, *paid* as above, under cover, to M. J. B. Bailliere, Rue Hautefeuille, *Paris;* or H. Bailliere, 219 Regent-street, *London;* or Lindsay & Blackiston, *Philadelphia;* or Wm. B. Ticknor & Co., *Boston.* The attention of Correspondents is respectfully requested to the above, as the Publishers are frequently subjected to unnecessary expense for postage and carriage.

All remittances of money and letters on the *business* of the Journal, should be directed to the Proprietors.

CONTENTS.—NO. II.

NEW SERIES.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE.

ART. I.—On the Use of Common Salt in the Treatment of Intermittent Fever. By Jos. C. HUTCHISON, M. D. . . 159

ART. II.—Case of Perforation of the Rectum, followed by Extensive Fæcal Abscess of the Nates. By L. A. SAYRE, M. D., with an Illustration. 178

ART. III.—Case of Sclerema in an Infant. By C. D. SMITH, M. D. 190

ART. IV.—A Case of Congenital Malformation, with Illustrations. By J. G. SEWALL, M. D. 194

ART. V.—On the Ultimate Causes of Malarial Diseases. By J. R. BLACK, M. D. 197

ART. VI.—On Saccherated Extract of Ipecacuanha. By A. G. DUNN. 212

ART. VII.—Cases of Croup treated by Nitrate of Silver. By E. N. CHAPMAN, M. D. 213

ART. VIII.—On the Effects of Milk of Menstruating Nurses upon Infants. By STEPHEN SMITH, M. D. 217

ART. IX.—Contribution to our Knowledge of Poisoning by Aconite. By G. H. TUCKER, M. D. 222

ART. X.—On Heart Sounds in Rheumatism. By E. P. BENNETT, M. D. 239

PART II.—CRITICAL ANALYSIS.

ART. XI.—Transactions of American Medical Assoeiation, vol. vi. Philadelphia, 1853. 241

ART XII.—On Etiology, Pathology, and Treatment of Fibro-Bronchitis and Rheumatic Pneumonia. By T. H. BUCKLER, M. D. Philadelphia, 1853. 257

ART. XIII.—The Pathology and Treatment of Pulmonary Tuberculosis, &c. By J. H. BENNETT, M. D. Edinburgh, 1853. . 226

BIBLIOGRAPHICAL NOTICES.

ART. XIV.—PEREIRA'S Elements of Materia Medica and Therapeutics. By DR. CARSON. Vols. 1, 1852, vol. 2, 1854. . 274

ART. XV.—VIDAL'S Treatise on Venereal Diseases. Translated and Edited by DR. BLACKMAN, New-York, 1854. . . . 275

ART. XVI.—Pneumonia: its Supposed Connection with Autumnal Fevers. By R. LA ROCHE. Philadelphia, 1853. . 276

ART. XVII.—HANDY'S Text-Book of Anatomy and Guide in Dissections, &c. Philadelphia, 1854. 276

ART. XVIII.—PIGGOT'S Chemistry and Metallurgy, as applied to the Study of Dental Surgery. 277

PAGE.

ART. XIX.—LAWRENCE'S Treatise on Diseases of the Eye. New Edition. By DR. HAYS. Philadelphia, 1854. . . 278
ART. XX.—FOWNE'S Elements of Chemistry, &c. Edited by DR. BRIDGES. New Edition. Philadelphia, 1853. . . 278
ART. XXI.—ELLIS' Medical Formula, &c. Tenth Edition. Edited by DR. THOMAS. Philadelphia, 1854. . . . 278
ART. XXII.—BENNET'S Practical Treatise on Inflammation of the Uterus, &c. 4th Am. Edit. Philadelphia, 1853. . 278
ART. XXIII.—CARPENTER'S Prize Essay on Use and Abuse of Alcoholic Liquors, &c. By DR. CONDIE. Philadelphia, 1853. 279
ART. XXIV.—LAMBERT'S Human Anatomy, &c. Hartford, 1854. 279

PART III.—FOREIGN MEDICAL RETROSPECT.

PRACTICAL MEDICINE.

On the Diagnosis of Uræmic Blindness and Dyspnœa. . 280
Disorders of the Renal Secretion in Delirium Tremens and in Injury of the Spinal Cord. 283
Conclusions drawn from the Results of Re-vaccination of 257 Cases. 286
Treatment of Tetanus. 286
Change of Sight as Premonitory of Hard Cataract. . 287

SURGERY.

Observations on the Excision of Ovarian Tumors. . . 290
On the Reduction of Luxations of the Extremities when complicated with Fracture. 293
On the Cause and Treatment of Prolapsus of the Rectum. 594
Advantages of the Starched Apparatus in the Treatment of Fractures and Diseased Joints. 295

PART IV.—AMERICAN MEDICAL RETROSPECT.

Statistics of Yellow Fever in Philadelphia in 1853. . 296
On some Effects of the Administration of Iodide of Potassium. 297
Formulæ for Stypic Balsam. 299
Case of Pulsating Encephaloid Tumor of the Occiput. . 300
Case of Tracheotomy in Croup. 301
On the Internal Use of Chloroform. 302
On the Use of Sponge Pessaries. 303
Analysis of Sixty-seven Cases of Inversio Uteri. . . 304
Annual Meeting of the Amer. Med. Asso. . . . 305
Prof. John C. Dalton. 306
Medical Journals. 307
Medicinal Extract Works. 307

OBITUARY.

Necrological Notices of Drs. Hester, Cooke, Chamberlayne, McClellan. 308–10